MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION

PLAN AND PROFILE OF

MAIN STREET (ROUTE 28)
FROM GEORGE RYDER ROAD TO BARN HILL ROAD

IN THE TOWN OF

CHATHAM
BARNSTABLE COUNTY

FEDERAL AID PROJECT NO. CMQ/TAP/STP-003S(158)

CHATHAM
MAIN STREET (ROUTE 28) FROM
GEORGE RYDER ROAD TO BARN HILL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	1	109
PROJECT FILE NO.	606596		

TITLE SHEET & INDEX

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THE MASSACHUSETTS HIGHWAY DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES DATED 1988, AS AMENDED, THE SUPPLEMENTAL SPECIFICATIONS DATED JULY 1, 2015, THE 2017 CONSTRUCTION STANDARD DETAILS, THE 2015 OVERHEAD SIGNAL STRUCTURE AND FOUNDATION STANDARD DRAWINGS, MASSDOT TRAFFIC MANAGEMENT PLANS AND DETAIL DRAWINGS, THE LATEST MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS WITH MASSACHUSETTS AMENDMENTS, THE 1990 STANDARD DRAWINGS FOR SIGNS AND SUPPORTS, THE 1968 STANDARD DRAWINGS FOR TRAFFIC SIGNALS AND HIGHWAY LIGHTING, AND THE LATEST EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK, WILL GOVERN.

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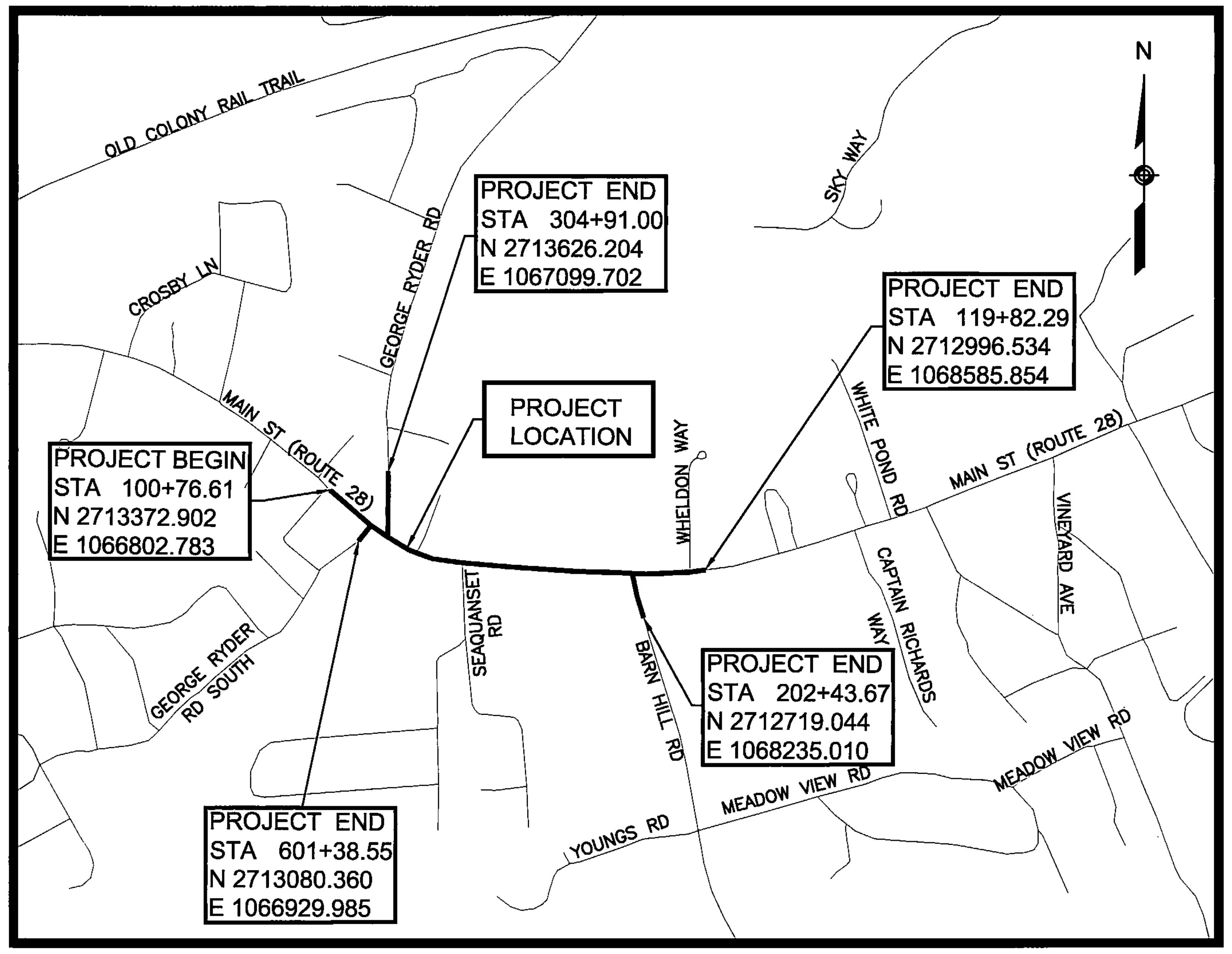

500 0 500 1000
SCALE 1" = 500'

LENGTH OF PROJECT = 2,778 FEET = 0.526 MILES

DESIGN DESIGNATION (MAIN STREET / ROUTE 28)

DESIGN SPEED	35 MPH
ADT (2014)	13,622
ADT (2024)	15,051
K	8.0%
D	50%
T (PEAK HOUR)	4.3%
T (AVERAGE DAY)	5.1%
DHV	1205
DDHV	604
FUNCTIONAL CLASSIFICATION	PRINCIPAL ARTERIAL

DATE	DESCRIPTION	REV #

RICHARD E. LATINI
CIVIL
No. 41033
4/12/18

HOWARD STEIN HUDSON
11 Beacon Street, Suite 1010
Boston, MA 02108
www.hshassoc.com

massDOT
Massachusetts Department of Transportation
Highway Division

RECOMMENDED FOR APPROVAL

4-12-18
CHIEF ENGINEER P.E. **DATE**

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED:

DIVISION ADMINISTRATOR **DATE**

APPROVED

4/13/18
HIGHWAY ADMINISTRATOR **DATE**

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GENERAL NOTES

GENERAL NOTES

SURVEY

1. ALL UNDERGROUND UTILITIES AS SHOWN WERE COMPILED UTILIZING SURVEY INFORMATION AND AVAILABLE RECORD INFORMATION PROVIDED BY BAY COLONY GROUP ON THE PLAN ENTITLED TOPOGRAPHIC PLAN OF LAND ON ROUTE 28, DATED JULY 31, 2012. ADDITIONAL SURVEY WAS PROVIDED BY A PLUS CONSTRUCTION ON THE PLAN ENTITLED PLAN OF ROUTE 28, DATED MARCH 15, 2016.

2. THE ACCURACY AND COMPLETENESS OF UNDERGROUND UTILITIES AS SHOWN ON THE PLANS ARE NOT GUARANTEED. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE EXACT LOCATION, SIZE, TYPE, ETC. OF ALL UNDERGROUND UTILITIES THAT MAY BE AFFECTED BY THE WORK. AT LEAST 72 HOURS BEFORE DIGGING BEGINS THE CONTRACTOR IS REQUIRED TO CALL DIG SAFE AT (888)344-7233. ALL CITY OWNED UTILITY STRUCTURES WITHIN AREAS AFFECTED BY THE WORK SHALL BE ADJUSTED TO NEW LINE AND GRADE AS DIRECTED BY THE ENGINEER. ANY UTILITY POLES AND/OR GUY POLES WITHIN AREAS AFFECTED BY THE WORK SHALL BE REMOVED AND RESET BY THE RESPECTIVE UTILITY COMPANY. ALTERATIONS TO UTILITIES NOT OWNED BY THE CITY SHALL BE MADE BY THE RESPECTIVE UTILITY OWNERS.

3. THE CONTRACTOR SHALL FIELD VERIFY CONDITIONS AND DIMENSIONS PRIOR TO CONSTRUCTION.

4. ELEVATIONS SHOWN REFER TO NAVD 88 VERTICAL DATUM. THE COORDINATE INFORMATION INCLUDED ON THESE PLANS IS BASED UPON MASSACHUSETTS GRID SYSTEM, NAD 1983, AS DERIVED FROM GPS CONTROL COORDINATES PROVIDED BY THE MASSDOT HIGHWAY DEPARTMENT SURVEY SECTION.

5. BENCHMARK INFORMATION:
SEE CONSTRUCTION BASELINE TIES SHEET 14-15FOR BENCHMARK INFORMATION AND LOCATIONS.

TEMPORARY BENCHMARKS SET:

TBM #3 (PK NAIL)
ELEV = 39.45

TBM #4 (PK NAIL)
ELEV = 40.81

TBM #5 (PK NAIL)
ELEV= 40.76

TBM #6 (PK NAIL)
ELEV = 44.26

TBM #7 (PK NAIL)
ELEV = 50.92

TBM #8 (PK NAIL)
ELEV = 50.87

TBM #9 (PK NAIL)
ELEV = 52.31

TBM #10 (PK NAIL)
ELEV = 52.88

TBM #11 (PK NAIL)
ELEV= 54.41

TBM #13 (PK NAIL)
ELEV = 43.82

TBM #14 (PK NAIL)
ELEV = 40.41

TBM #15 (PK NAIL)
ELEV = 42.34

TBM #16 (PK NAIL)
ELEV = 39.54

TBM #17 (PK NAIL)
ELEV = 48.21

TBM #18 (PK NAIL)
ELEV = 47.47

TBM #19 (PK NAIL)
ELEV = 50.17

TBM #20 (PK NAIL)
ELEV = 42.41

TBM #22 (PK NAIL)
ELEV = 50.97

TBM #23 (PK NAIL)
ELEV = 49.48

TBM #24 (PK NAIL)
ELEV = 52.91

TBM #25 (PK NAIL)
ELEV = 54.65

TBM #26 (PK NAIL)
ELEV = 54.45

6. MASSDOT HIGHWAY DIVISION SHALL RE-ESTABLISH SURVEY CONTROL PRIOR TO BEGINNING WORK ON THIS CONTRACT.

UTILITIES

1. WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, THE LOCATION, ELEVATION, AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR AND THE INFORMATION FURNISHED TO THE ENGINEER FOR RESOLUTION OF THE CONFLICT.

2. THE CONTRACTOR SHALL MAKE ALL ARRANGEMENTS FOR THE ALTERATION AND ADJUSTMENT OF ELECTRIC, TELEPHONE, AND ANY OTHER PRIVATE UTILITIES BY THE UTILITY COMPANIES AT NO ADDITIONAL COST TO THE OWNER. IF THE CONTRACTOR ADJUSTS UTILITY COVERS IT SHALL BE DEEMED PART OF THE WORK AND THERE WILL BE NO ADDITIONAL COST.

3. THE CONTRACTOR'S ATTENTION IS DIRECTED TO THE NECESSITY OF MAKING HIS OWN INVESTIGATION IN ORDER TO ASSURE THAT NO DAMAGE TO EXISTING STRUCTURES, DRAINAGE LINES, TRAFFIC SIGNAL CONDUITS, ETCETERA, WILL OCCUR.

4. THE CONTRACTOR SHALL NOTIFY MASSACHUSETTS DIG SAFE AND PROCURE A DIG SAFE NUMBER FOR EACH LOCATION PRIOR TO DISTURBING EXISTING GROUND IN ANY WAY. THE TELEPHONE NUMBER OF THE DIG SAFE CALL CENTER IS 1-888-344-7233.

5. NO EXISTING PUBLIC UTILITY STRUCTURES SHALL BE ABANDONED AND/OR DISMANTLED WITHOUT AUTHORIZATION FROM THE ENGINEER.

6. DRAINAGE ELEVATIONS ARE PROVIDED FOR DESIGN PURPOSES ONLY. THE CONTRACTOR SHALL VERIFY BY TEST PIT, THE LOCATIONS OF EXISTING UTILITIES WHICH MAY CONFLICT WITH THE PROPOSED DRAINAGE DESIGN. ANY FIELD ADJUSTMENTS REQUIRED WILL BE MADE AS APPROVED OR DIRECTED BY THE ENGINEER. ONLY AFTER THE CONTRACTOR VERIFIES ELEVATIONS FOR THE CONSTRUCTABILITY OF THE DRAINAGE SYSTEM SHALL ANY STRUCTURES BE ORDERED. ANY FIELD ADJUSTMENT TO LINE AND GRADE UP TO A DEPTH OF 5 FEET SHALL BE INCLUDED IN THE COST OF THE PIPE. PIPE EXCAVATION GREATER THAN 5 FEET WILL BE PAID UNDER CLASS B TRENCH EXCAVATION.

UTILITIES (CONT.)

7. THE CONTRACTOR MUST BE LICENSED BY THE TOWN OF CHATHAM PRIOR TO STARTING ANY UTILITY WORK ON THE TOWNS WATER, SEWER, AND DRAINAGE DISTRIBUTION SYSTEMS.

8. THE CONTRACTOR SHALL BE RESPONSIBLE TO NOTIFY THE TOWN OF CHATHAM DEPARTMENT OF PUBLIC WORKS (CDPW) AT LEAST 24-HOURS PRIOR TO THE REQUIRED INSPECTION.

9. THE CONTRACTOR MUST NOTIFY CDPW WATER DIVISION AT LEAST 24 HOURS IN ADVANCE FOR ANY AND ALL HYDRANT HOOK UPS AND/OR DISCONNECT ASSOCIATED WITH WATER USAGE. THE CDPW IS RESPONSIBLE FOR ALL SHUT DOWN AND TURNING ON ALL WATER MAINS, HYDRANTS AND GATES ASSOCIATED WITH THE TOWN'S WATER DISTRIBUTION.

10. ALL WATER, SEWER, AND DRAINAGE MODIFICATIONS AND/OR INSTALLATIONS SHALL BE INSPECTED BY THE TOWN OF CHATHAM PRIOR TO BACKFILL OPERATIONS BEING PERFORMED.

11. ANY AND ALL WATER, SEWER, AND DRAINAGE UTILITY WORK AND/OR MATERIALS INSTALLED SHALL CONFORM TO THE TOWN OF CHATHAM'S REQUIREMENTS AND APPLICABLE CODES.

12. ALL EROSION CONTROL MEASURES SHALL BE INSTALLED/PLACED PRIOR TO CONSTRUCTION AND APPROVED BY THE CONSERVATION OFFICER.

13. ALL EROSION CONTROL SHALL CONFORM TO THE TOWN OF CHATHAM CONSERVATION COMMISSION REQUIREMENTS AS STATED ON THE ORDER OF CONDITIONS (IF APPLICABLE).

CONSTRUCTION

1. AREAS OUTSIDE THE LIMITS OF PROPOSED WORK DAMAGED BY THE CONTRACTOR'S OPERATIONS, INCLUDING STAGING AREAS, SHALL BE RESTORED BY THE CONTRACTOR TO THEIR ORIGINAL CONDITION AT NO ADDITIONAL COST.

2. THE CONTRACTOR IS HEREBY NOTIFIED THAT ADDITIONAL WORK WITHIN THE PROJECT LIMITS MAY BE PERFORMED BY OTHERS.

3. JOINTS BETWEEN NEW HOT MIX ASPHALT, ROADWAY PAVEMENT, AND THE LOCATIONS OF SAW CUT FOR EXISTING PAVEMENT SHALL BE SEALED WITH HOT POURED RUBBERIZED ASPHALT AND BACKSANDED.

4. ALL GRADING SHALL COMPLY WITH THE RULES AND REGULATIONS OF THE MASSACHUSETTS ARCHITECTURAL ACCESS BOARD (MAAB) AND THE AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES FOR BUILDINGS AND FACILITIES (ADAAG), LATEST EDITION. IN CASE OF CONFLICT BETWEEN REGULATIONS, THE GUIDELINE PROVIDING GREATER ACCESS SHALL APPLY. WHEELCHAIR RAMP INSTALLATIONS SHALL BE IN ACCORDANCE WITH THE MASSDOT WHEELCHAIR RAMP STANDARDS-LATEST EDITION AND THE PLANS.

5. WHERE THE NEW CONSTRUCTION IS WITHIN THE EXISTING TRAVELED WAY, THE CONTRACTOR SHALL PERFORM WORK SO THAT INTERFERENCE TO BUSINESS CONCERNS AND ABUTTERS, ON ACCOUNT OF THE CONSTRUCTION WORK, IS KEPT TO A MINIMUM. THE CONTRACTOR WILL NOT BE ALLOWED TO PARK EQUIPMENT, OR STOCKPILE MATERIAL ON THE TRAVELED WAYS OVERNIGHT OR WHEN NOT IN USE. THE CONTRACTOR SHALL MAINTAIN SAFE AND REASONABLE ACCESS TO AND FROM ABUTTING PROPERTIES AT ALL TIMES AT NO ADDITIONAL COST.

6. THE CONTRACTOR SHALL DISPOSE OF ALL WASTE MATERIAL IN ACCORDANCE WITH ALL FEDERAL, STATE AND LOCAL REGULATIONS AT HIS OWN EXPENSE, OUTSIDE OF THE PROJECT LIMITS.

7. CONTRACTOR SHALL BE RESPONSIBLE FOR INVESTIGATING AND CONFIRMING THAT ALL ITEMS TO BE REUSED ARE IN SERVICEABLE CONDITION. IF IT IS DEEMED THAT ANY ITEM IS NOT ABLE TO BE REUSED, THE CONTRACTOR SHALL NOTIFY THE OWNER IN WRITING AND INCLUDE ESTIMATED COSTS TO INSTALL NEW.

TRAFFIC

1. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE SHOP DRAWINGS FOR TRAFFIC MANAGEMENT AND TO COMPLY WITH CONDITIONS OUTLINED WITHIN THE SPECIFICATIONS AND MASSDOT HIGHWAY DIVISION STANDARD DETAILS AND DRAWINGS FOR THE DEVELOPMENT OF TEMPORARY TRAFFIC CONTROL PLANS MANUAL.

2. THE MINIMUM MOUNTING HEIGHT OF POST-MOUNTED SIGNS, MEASURED VERTICALLY FROM THE BOTTOM OF THE SIGN TO THE TOP OF THE CURB OR SIDEWALK, OR TO THE ELEVATION OF THE NEAR EDGE OF THE TRAVELED WAY, SHALL BE 7 FEET UNLESS OTHERWISE SPECIFIED ON THE PLANS.

TEMPORARY TRAFFIC CONTROL PLANS

1. THIS PLAN DEPICTS IN SCHEMATIC FORM, THE ELEMENTS OF AN APPROACH TO THE LAYOUT AND PLANNING OF THE WORK DURING THE PROGRESS OF THE CONSTRUCTION OPERATIONS.THE PREPARER OF THIS PLAN HAS NO ROLE IN THE OVERSIGHT OR OTHERWISE IN THE IMPLEMENTATION OF THIS PLAN.

2. CONTRACTOR SHALL SUBMIT TO THE RESIDENT ENGINEER TRAFFIC MANAGEMENT PLANS FOR REVIEW AND APPROVAL BY MASSDOT HIGHWAY DIVISION. CONTRACTOR SHALL COORDINATE THE CONSTRUCTION EFFORT WITH OTHER PROJECTS IN THE VICINITY IN ORDER TO MINIMIZE POTENTIAL TRAFFIC AND PARKING IMPACTS.

TEMPORARY TRAFFIC CONTROL PLANS (CONT.)

3. THE TEMPORARY TRAFFIC CONTROL PLANS CONTAINED HEREIN ARE GIVEN AS A GUIDE FOR TYPICAL WORK ZONE TRAFFIC CONTROL APPLICATIONS FOR THE TYPES OF WORK ANTICIPATED FOR THIS PROJECT. THEY ARE NOT INTENDED TO COVER ALL POSSIBLE CONSTRUCTION OPERATIONS WHICH THE CONTRACTOR MAY CHOOSE TO EMPLOY. THE CONTRACTOR SHALL SUBMIT TO THE RESIDENT ENGINEER FOR REVIEW AND APPROVAL TEMPORARY TRAFFIC CONTROL PLANS FOR ANY WORK OUTSIDE THE WORK ZONES INDICATED IN THESE DRAWINGS, INCLUDING ALTERNATIVE PHASING OR MODIFICATION OF ANY ASPECT OF THE TEMPORARY TRAFFIC CONTROL PLANS OR CONSTRUCTION STAGING WHICH SHALL BE IN ACCORDANCE WITH THE CURRENT M.U.T.C.D. AND AS APPROVED OR DIRECTED BY RESIDENT ENGINEER. THE CONTRACTOR SHALL BEAR RESPONSIBILITY FOR THE SUBMISSION AND REVIEW OF ALTERNATIVE PLANS, AT NO ADDITIONAL COST

4. LANE RESTRICTIONS (OTHER THAN ACTIVE WORK ZONES) MAY NOT REMAIN OVERNIGHT OR DURING NON-WORKING HOURS AND MUST BE REMOVED BY THE END OF EACH WORKING TIME RESTRICTION. AFTER EACH WORKING DAY, TRAFFIC CONTROL DEVICES THAT ARE NOT REQUIRED SHALL BE MOVED OFF THE ROADWAY OR FULL DEPTH CONSTRUCTION AREA AND PLACED SO AS NOT TO IMPEDE PEDESTRIAN AREAS, ABUTTER ACCESS OR CAUSE CONFUSION TO ROADWAY USERS. IN CERTAIN CIRCUMSTANCES, AND ONLY WITH THE APPROVAL OF MASSDOT HIGHWAY DIVISION, CAN LANE RESTRICTIONS REMAIN OVERNIGHT, REFLECTORIZED DRUMS SHALL BE FITTED WITH STEADY BURN AND/OR FLASHING WARNING LIGHTS AT THE RESIDENT ENGINEERS DIRECTION.

5. PLACE ALL CONSTRUCTION SIGNING, TRAFFIC CONTROL DEVICES AND TEMPORARY PAVEMENT MARKINGS FOR EACH PHASE PRIOR TO COMMENCEMENT OF CONSTRUCTION.

6. THESE PLANS ARE NOT INTENDED TO LIMIT THE CONTRACTORS RIGHT TO SCHEDULE THE WORK BUT TO OUTLINE ONE WAY OF PROGRESSING. THE CONTRACTOR IS EXPECTED TO USE KNOWLEDGE AND EXPERIENCE TO PERFORM THE WORK IN THE MOST EFFICIENT MANNER IN COMPLIANCE WITH THE DRAWING AND SPECIFICATIONS AND THE REQUIREMENTS OF THE INDIVIDUAL AGENCIES AND ABUTTERS.

7. CONTRACTOR SHALL SECURE WORK AREAS ACCORDING TO CURRENT CONDITIONS TO ENSURE PUBLIC SAFETY AND CONVENIENCE. THIS SHALL INCLUDE ENSURING THAT ALL EXCAVATIONS ARE PROTECTED AT ALL TIMES AND WHEN WORK SHIFT IS COMPLETED.

8. EXISTING CONDITIONS ARE FOR CONTRACTOR INFORMATION ONLY AND ARE EXISTING CONDITIONS AT THE TIME OF DESIGN. THE CONTRACTOR SHALL VERIFY, AS NECESSARY, ACTUAL FIELD CONDITIONS AT TIME OF CONSTRUCTION.

9. TYPICAL DAYTIME WORK HOURS ARE FROM 9:00 AM TO 3:30 PM ON WEEKDAYS, UNLESS OTHERWISE PERMITTED BY MASSDOT HIGHWAY DIVISION. WORK SHALL NOT BE PERFORMED THE DAY BEFORE, OR THE DAY AFTER, A HOLIDAY WEEKEND,UNLESS OTHERWISE PERMITTED BY MASSDOT HIGHWAY DIVISION . REFER TO TEMPORARY TRAFFIC CONTROL PLANS, SPECIFICATIONS, AND PERMITS FOR MODIFICATION TO ALLOWABLE WORK PERIODS. ALL WORK SCHEDULES, HOWEVER, SHALL BE PRE-APPROVED BY THE DEPARTMENT PRIOR TO BEGINNING WORK. WORK NECESSARY OUTSIDE OF THESE NORMAL WORK HOURS BECAUSE OF TRAFFIC CONDITIONS, AS NOTED IN THE PLANS OR SPECIFICATIONS, SHALL BE APPROVED BY MASSDOT HIGHWAY DIVISION.

10. CONTRACTOR SHALL PROVIDE DETAILS FOR TRAFFIC CONTROL AS DIRECTED BY THE MASSDOT RESIDENT ENGINEER AND IN ACCORDANCE WITH THE SPECIFICATIONS. CONTRACTOR SHALL BE GUIDED BY TEMPORARY TRAFFIC CONTROL LAYOUTS PROVIDED FOR SPECIFIC LOCATIONS, AND BY TYPICAL LAYOUTS AT ALL OTHER LOCATIONS. TYPICAL LAYOUTS SHALL CONFORM TO PART 6 OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION.

11. WORK ZONES INDICATED ON THE TEMPORARY TRAFFIC CONTROL PLANS ARE INTENDED FOR THE DURATION OF THE WORK WITHIN THE ZONES ONLY AND SHALL BE RESTORED TO CONDITIONS ACCEPTABLE TO THE MASSDOT HIGHWAY DIVISION AT COMPLETION OF THE WORK INDICATED.

12. CONTRACTOR SHALL COORDINATE WITH MASSDOT HIGHWAY DIVISION CONCERNING ALL SCHEDULED SPECIAL EVENTS WITHIN THE LIMITS OF WORK.

13. THE CONTRACTOR SHALL AT ALL TIMES COORDINATE ROAD AND LANE CLOSURED, AND OTHER DISRUPTIONS IN THE PROJECT AREA, WITH MBTA BUS OPERATIONS.

CHANNELIZATION:

1. CHANNELIZATION SHALL BE ACCOMPLISHED THROUGH THE USE OF REFLECTORIZED PLASTIC DRUMS WITH LIGHTS IN ACCORDANCE WITH THE CURRENT M.U.T.C.D. ALL LANE TAPERS SHALL BE IN ACCORDANCE WITH THE CURRENT M.U.T.C.D.

2. ALL DRUMS SHALL BE PLACED AND MOVED AS NECESSARY TO MAINTAIN ADEQUATE ABUTTER ACCESS AT ALL TIMES. WORK MAY REQUIRE ADDITIONAL SIGNS, DRUMS, AND OTHER TRAFFIC CONTROL DEVICES.

3. THE MAXIMUM SPACING BETWEEN CHANNELIZATION DEVICES (DRUMS OR CONES) SHALL BE APPROXIMATELY EQUAL IN FEET TO THE POSTED SPEED LIMIT. THE MINIMUM SPACING SHALL BE 20' 0.C.

4. METAL DRUMS ARE PROHIBITED AS CHANNELIZATION DEVICES.

GRADE DIFFERENCES:

1. WHERE THERE IS A LONGITUDINAL DIFFERENCE IN ELEVATION BETWEEN EXISTING PAVEMENT AND COLD PLANED OR NEW PAVEMENT, THE CONTRACTOR SHALL PATCH A TEMPORARY HMA WEDGE WITH A 12:1 (OR FLATTER) SLOPE FOR A SMOOTH TRANSITION.

2. CROSS-SECTIONAL GRADE DIFFERENCED IN EXCESS OF 2" DURING NON-WORKING HOURS WILL REQUIRE DELINEATION BY USE OF REFLECTORIZED DRUMS, OR CONES AS DIRECTED BY MASSDOT HIGHWAY DIVISION.

3. CROSS-SECTIONAL GRADE DIFFERENCES IN EXCESS OF 4" DURING NON-WORKING HOURS SHALL BE PROTECTED BY BACKFILLING WITH A WEDGE OF EARTHWORK TO BE COMPACTED AT 4:1 SLOPE AND WILL ALSO REQUIRE DELINEATION BY USE OF DRUMS.

4. A MAXIMUM SLOPE OF 4:1 MUST BE MAINTAINED AFTER WORKING HOURS DURING SUBBASE AND BASE COURSE INSTALLATION ALONG EDGE OF THE TRAVEL WAY. A MAXIMUM SLOPE OF 8:1 MUST BE MAINTAINED ON ALL ABUTTER ACCESS DRIVES AND A MAXIMUM SLOPE OF 12:1 MUST BE MAINTAINED ON ALL SIDEWALKS.

TEMPORARY TRAFFIC CONTROL PLANS (CONT.)

CONSTRUCTION SIGNING:

1. LOCATIONS OF SIGNS SHOWN ARE APPROXIMATE. EXACT LOCATION SHALL BE DETERMINED BY THE CONTRACTOR IN THE FIELD. THE CONTRACTOR SHALL ENSURE THAT SIGNS ARE PLACED IN ACCORDANCE WITH THE CURRENT M.U.T.C.D.

2. EXISTING SIGNING WHICH CONFLICTS WITH PROPOSED CONSTRUCTION TRAFFIC MANAGEMENT SIGNING SHALL BE REMOVED AND STACKED OR COVERED AND RESTORED AT THE END OF THE WORK.

3. ALL SIGNS SHALL BE COVERED OR REMOVED WHEN CONDITION IS NOT IN EFFECT.

4. THE MINIMUM MOUNTING HEIGHT OF POST-MOUNTED SIGNS, MEASURED VERTICALLY FROM THE BOTTOM OF THE SIGN TO THE TOP OF THE CURB OR SIDEWALK, OR TO THE ELEVATION OF THE NEAR EDGE OF THE TRAVELED WAY, SHALL BE 7 FEET UNLESS OTHERWISE SPECIFIED ON THE PLANS.

PAVEMENT MARKINGS:

1. UNLESS OTHERWISE NOTED, ALL PAVEMENT MARKINGS, SIGNS AND OTHER TRAFFIC EQUIPMENT REMOVED OR DAMAGED AS A RESULT OF THE CONTRACTOR'S OPERATIONS SHALL BE REPLACED IN ACCORDANCE WITH THE REQUIREMENTS OF MASSDOT HIGHWAY DIVISION.

2. CONTRACTOR SHALL INSTALL, RENEW AND MAINTAIN ALL TRAFFIC CONTROL DEVICES INCLUDING PAVEMENT MARKINGS AS SHOWN ON THE DRAWINGS, IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND AS REQUIRED BY THE MASSDOT RESIDENT ENGINEER.

3. CONTRACTOR SHALL REMOVE ALL PAVEMENT MARKINGS WHICH CONFLICT WITH PROPOSED PAVEMENT MARKINGS. THE METHOD OF REMOVAL SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF MASSDOT HIGHWAY DIVISION.

4. ALL TEMPORARY PAVEMENT MARKINGS SHALL BE MAINTAINED THROUGHOUT THE ENTIRE SEQUENCE. ALL EXISTING MARKING WITHIN THE PROJECT LIMITS SHALL BE REMOVED AND REPLACED AS INDICATED ON THE PAVEMENT MARKING PLANS.

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LEGEND & ABBREVIATIONS

LEGEND

CIVIL/UTILITY/SURVEY LEGEND

EXISTING	PROPOSED	
	MH ⦵	DRAIN MANHOLE WITH WEIR
Ⓓ	MH ◎	DRAIN MANHOLE
Ⓢ	Ⓢ	SEWER MANHOLE
Ⓣ	Ⓣ	TELEPHONE MANHOLE
Ⓒ	Ⓒ	CABLE TV MANHOLE
Ⓔ	Ⓔ	ELECTRIC MANHOLE
	◎	DRY WELL
?	?	OTHER MANHOLE
CB □	CBCI □	DEEP SUMP CATCH BASIN
GI □	GI □	GUTTER INLET
GG ○	GG ○	GAS GATE
WGT ○	WG ○	WATER GATE
☼	☼	LIGHT POLE
✸	✸	MASSDOT STANDARD POLE
-○-	-○-	UTILITY POLE
Guy ●	Guy ●	GUY WIRE
	Hyd.	HYDRANT
	●	SIGN
□	MB □	MAILBOX
▭	■	ELECTRIC HANDHOLE
⊠	⊠	TRAFFIC CONTROL BOX
●	●	TREE
═	—	GRANITE CURB
	SURVEY TRAVERSE	SURVEY TRAVERSE
△	△	TEMPORARY BENCHMARK
WATER	WATER	WATER
DRAIN	X'-X" RCP ←	DRAIN
SEWER	SEWER	SEWER
	- - - -	LIGHTING
	//////	CONCRETE ENCASED LIGHTING CONDUIT
—	-□-□-□-	GUARDRAIL
	-○-○-○-	BR-2 RAIL
OHW	— — —	OVERHEAD WIRE
	▭	PROPOSED WALL
		PROPOSED TREE PROTECTION

CONSTRUCTION PLAN LEGEND

#	PROPOSED WHEELCHAIR RAMP
PDMH#X	PROPOSED DRAINAGE MANHOLE
#	PROPOSED DRIVEWAY
#	PROPOSED CATCH BASIN
C##	CURVE NUMBER
—— ——	PAVEMENT SAWCUT LINE
— — —	LINE OF EASEMENT

TEMPORARY TRAFFIC CONTROL PLAN LEGEND

⇨	DIRECTION OF TRAVEL / NUMBER OF TRAVEL LANES
• • •	STACKABLE REFLECTORIZED TRAFFIC DRUM
· · ·	42" TRAFFIC CONE
▬	WORK AREA
	SINGLE SIGN POST
F	FLAGGER
P	POLICE DETAIL
⇔	PEDESTRIAN FLOW
⊓	TYPE III BARRICADE
	TAPERED PRECAST CONCRETE TRAFFIC BARRIER
	HIGH MOUNTED INTERNALLY ILLUMINATED FLASHING ARROW
	VARIABLE MESSAGE BOARD
—X—X—X—	72" CHAIN LINK FENCE
▬	TEMPORARY CONCRETE BARRIER
═	TEMPORARY CONCRETE BARRIER WITH 72" CLF
	TEMPORARY IMPACT ATTENUATOR
	VEHICLE MOUNTED MOVABLE IMPACT ATTENUATOR
– – – – –	PROPOSED GRANITE CURB TO BE INSTALLED
——	PROPOSED NEW CURB

PAVEMENT MARKING LEGEND

SWEL	6" SOLID WHITE EDGE LINE
SYEL	6" SOLID YELLOW EDGE LINE
SWLL	6" SOLID WHITE LANE LINE
BWLL	6" BROKEN WHITE LANE LINE 10' MARK - 30' SKIP
DWELx	6" DOTTED WHITE EDGE LINE 2' MARK - 4' SKIP
DWELx	12" DOTTED WHITE EDGE LINE 2' MARK - 4' SKIP
SWCHL	12" SOLID WHITE CHANNELIZATION LINE
SYCHL	12" SOLID YELLOW CHANNELIZATION LINE
DYCL	2-6" YELLOW CENTER LINES, 10" O.C.
SL	WHITE STOP LINE (12" UNLESS OTHERWISE SPECIFIED)
CW	WHITE - CROSS WALK (12" LINES, 10' O.C.; 12" LONGITUDINAL LINES, 4' O.C.) (UNLESS OTHERWISE SHOWN)
SWGL	12" SOLID WHITE GORE LINE (10' O.C. @45°).
SYGL	12" SOLID YELLOW GORE LINE (10' O.C. @45°).
DDYCL	6" DOTTED YELLOW CENTER LINES, 6" GAP 2' MARK - 4' SKIP
▼▼▼▼▼▼▼ YL	YIELD LINE
▶	ONE-WAY YELLOW SLOTTED PAVEMENT MARKERS
◆	TWO-WAY YELLOW/YELLOW SLOTTED PAVEMENT MARKERS
➡	BIKE LANE SYMBOL
»	SHARROW SYMBOL

* CONTRACTOR SHALL MAINTAIN ALL PAVEMENT MARKINGS SHOWN BOLD ON THE TRAFFIC MANAGEMENT DRAWINGS. NEW PAVEMENT MARKINGS FOR EACH TRAFFIC MANAGEMENT PHASE ARE SHOWN WITH LABELS AND DIMENSIONS. ALL PAVEMENT MARKINGS THAT NEED TO BE MAINTAINED FOR GREATER THAN SIX MONTHS SHALL BE THERMOPLASTIC. PAVEMENT MARKINGS SHOWN ON THE EXISTING CONDITIONS PLANS ARE FOR CONTRACTOR INFORMATION ONLY.

ABBREVIATIONS

GENERAL

AADT	ANNUAL AVERAGE DAILY TRAFFIC
ABAN	ABANDON
ADJ	ADJUST
AD	ALGEBRAIC DIFFERENCE
ADT	AVERAGE DAILY TRAFFIC
APPROX.	APPROXIMATE
A.C.	ASPHALT CONCRETE
ACCM PIPE	ASPHALT COATED CORRUGATED METAL PIPE
BIT.	BITUMINOUS
BC	BOTTOM OF CURB
BD.	BOUND
B_{L}	BASELINE
BLDG	BUILDING
BM	BENCH MARK
BO	BY OTHERS
BOS	BOTTOM OF SLOPE
BR.	BRIDGE
CB	CATCH BASIN
CBCI	CATCH BASIN WITH CURB INLET
CC	CEMENT CONCRETE
CCM	CEMENT CONCRETE MASONRY
CEM	CEMENT
CI	CURB INLET
CIP	CAST IRON PIPE
CI.	CLASS (CONCRETE, EXCAVATION, ETC.)
CIT	CHANGE IN TYPE
CLDI	CEMENT LINED DUCTILE IRON
CLF	CHAIN LINK FENCE
℄	CENTERLINE
CMP	CORRUGATED METAL PIPE
CSP	CORRUGATED STEEL PIPE
CO.	COUNTY
CONC	CONCRETE
CONT.	CONTINUED
CONT	CONTINUOUS
CONST	CONSTRUCTION
CR GR	CROWN GRADE
DDHV	DIRECTIONAL DESIGN HOURLY VOLUME
DHV	DESIGN HOURLY VOLUME
DI	DROP INLET
DIA	DIAMETER
DIP	DUCTILE IRON PIPE
DW	STEADY DON'T WALK - PORTLAND ORANGE
DWY	DRIVEWAY
ELEV (OR EL.)	ELEVATION
EMB	EMBANKMENT
EOP	EDGE OF PAVEMENT
EXIST (OR EX)	EXISTING
EXC	EXCAVATION
F&C	FRAME AND COVER
F&G	FRAME AND GRATE
FDN.	FOUNDATION
FLDSTN	FIELDSTONE
GAR	GARAGE
GD	GROUND
GG	GAS GATE
GI	GUTTER INLET
GIP	GALVANIZED IRON PIPE
GRAN	GRANITE
GRAV	GRAVEL
GRD	GUARD
HES	HIGH EARLY STRENGTH
HDW	HEADWALL
HMA	HOT MIX ASPHALT
HOR	HORIZONTAL
HP	HIGH POINT
HSD	HEADLIGHT SIGHT DISTANCE
HYD	HYDRANT
INV	INVERT
JCT	JUNCTION
L	LENGTH OF CURVE
LB	LEACHING BASIN
LP	LOW POINT
LT	LEFT
MAX	MAXIMUM
MB	MAIL BOX
MH	MANHOLE
MHB	MASSACHUSETTS HIGHWAY BOUND
MIN	MINIMUM
NIC	NOT IN CONTRACT
NO.	NUMBER
O.C.	ON CENTER
PBS	POST BOTH SIDES
PC	POINT OF CURVATURE
PCC	POINT OF COMPOUND CURVATURE
P.G.L.	PROFILE GRADE LINE
PI	POINT OF INTERSECTION
POC	POINT ON CURVE
POT	POINT ON TANGENT
PRC	POINT OF REVERSE CURVATURE
PROJ	PROJECT

GENERAL (CONT.)

PROP	PROPOSED
PSB	PLANTABLE SOIL BORROW
PT	POINT OF TANGENCY
PVC	POINT OF VERTICAL CURVATURE
PVI	POINT OF VERTICAL INTERSECTION
PVT	POINT OF VERTICAL TANGENCY
PVMT	PAVEMENT
PWW	PAVED WATER WAY
R	RADIUS OF CURVATURE
R&D	REMOVE AND DISCARD
R&T	REMOVE & TRANSPORT
RCP	REINFORCED CONCRETE PIPE
RD	ROAD
RDWY	ROADWAY
REB	REBUILT
REM	REMOVE
REMOD	REMODELED
RET	RETAIN
RET WALL	RETAINING WALL
ROW	RIGHT-OF-WAY
RR	RAILROAD
R&R	REMOVE AND RESET
R&S	REMOVE AND STACK
RT	RIGHT
S	SLOPE
SB	STONE BOUND
SCO	SEWER CLEAN OUT
SHLD	SHOULDER
SMH	SEWER MANHOLE
ST	STREET
STA	STATION
SSD	STOPPING SIGHT DISTANCE
SHLO	STATE HIGHWAY LAYOUT LINE
SW	SIDEWALK
T	TANGENT DISTANCE OF CURVE/ TRUCK PERCENTAGE
TAN	TANGENT
TEMP	TEMPORARY
TC	TOP OF CURB
TOS	TOP OF SLOPE
TYP	TYPICAL
UP	UTILITY POLE
VAR	VARIES
VERT	VERTICAL
VC	VERTICAL CURVE
WCR	WHEELCHAIR RAMP
WG	WATER GATE
WIP	WROUGHT IRON PIPE
WM	WATER METER/WATER MAIN
X-SECT	CROSS SECTION

606596_HD(COVER).DWG Plotted on 30-Mar-2018 1:44 PM

CHATHAM
MAIN STREET (ROUTE 28) FROM GEORGE RYDER ROAD TO BARN HILL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	4	109
	PROJECT FILE NO.	606596	

KEY PLAN & BORING LOCATIONS

- ⊕ BORING (SHEET 5)
- ▲ PAVEMENT CORE (SHEETS 5-7)
- ◇ X CONSTRUCTION BASELINE TIE PLANS (SHEETS 14-15)
- ☐ X CONSTRUCTION PLANS (SHEETS 16-20)
- △ X CURB TIE & GRADING PLANS (SHEETS 27-33)
- ⯃ X X TRAFFIC SIGNS & PAVEMENT MARKINGS (SHEETS 34-38)
- ○ X UTILITY PLANS (SHEETS 57-60)
- ⬭ X LIGHTING PLANS (SHEETS 61-64)

606596_HD(KEY).DWG Plotted on 30-Mar-2018 1:45 PM

CHATHAM
MAIN STREET (ROUTE 28) FROM GEORGE RYDER ROAD TO BARN HILL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	5	109
PROJECT FILE NO.	606596		

BORING PLANS

NEW HAMPSHIRE BORING, INC. P.O. Box 165 Derry, NH 03038	Phone: (603)437-1610 Fax: (603) 437-0034 E Mail: nhb@nhboring.com	Boring No. B-1 Scale 1" = 5'

City/Town: Chatham | Borings | Project File No: 606596 | Contract No: 77142
Project: Route 28 (Main Street) from George Ryder Road to Barn Hill Road | Date & Time Started: 5/18/15 11:20 am | Total Hours:
Groundwater Depth: None Encountered | Date & Time: | Date & Time Completed: 5/18/15 12:40 pm | 20 min
Coordinates: N 2713067.45 E 1067211.95 | Driller's Name: John Galvin | Helper's Name: Jerry Voight
Ground Elevation: 40.20' | Inspector's Name: Bryan Zimolka | Inspector's Company: Howard/Stein - Hudson (HSH)

Sample Number	Depth Range (Feet)	Blow Counts per 6 Inches Coring Times Minute Per Foot				Recovery Inches	Field Description	Strata Changes
							ASPHALT	9"
S-1	9" - 2'9"	16	27	20	14	12"	Dry, dense, brown FINE TO COARSE SAND, some medium to coarse gravel.	
S-2	2'9" - 4'9"	9	13	9	11	12"	Dry, medium dense, brown FINE TO COARSE SAND, some medium gravel.	4'9"
							Bottom of Exploration = 4'9"	

Notes:

Penetration Resistance (N) Guide:			
Cohesionless Soils (Sands, Gravels)		Cohesive Soils (Silts, Clays)	
Relative Density	Penetration Resistance	Consistency	Penetration Resistance
Very Loose	0 - 4	Very Soft	0 - 2
Loose	4 - 10	Soft	2 - 4
Medium Dense	10 - 30	Medium Stiff	4 - 8
Dense	30 - 50	Stiff	8 - 15
Very Dense	Over 50	Very Stiff	15 - 30
N=Sum of Second and Third 6" Blow Counts		Hard	Over 30

Terms Used for Second Entry of Descriptions: and = 40-50%, some = 10-40%, trace = 10% or less

Protective Device - Stand: Box:
Well Depth: Solid Pipe:
Stick Up Pipe: Screen Pipe:
Type of Drill Rig: M-2 Track Rig
4" thin wall core borer Depth:
Signs: Cones: Arrow-Board:
Sampler Type: S/S Size: 1 3/8 "
Automatic Hammer Weight:
Safety Hammer Weight: 140 lbs
Donut Hammer Weight: Fall: 30"
Core Barrel Type: Size:

NEW HAMPSHIRE BORING, INC. P.O. Box 165 Derry, NH 03038	Phone: (603)437-1610 Fax: (603) 437-0034 E Mail: nhb@nhboring.com	Boring No. B-2 Scale 1" = 5'

City/Town: Chatham | Borings | Project File No: 606596 | Contract No: 77142
Project: Route 28 (Main Street) from George Ryder Road to Barn Hill Road | Date & Time Started: 5/19/15 9:16 am | Total Hours:
Groundwater Depth: None Encountered | Date & Time: | Date & Time Completed: 5/19/15 9:40 pm | 24 min
Coordinates: N 2712993.10 E 1067704.32 | Driller's Name: John Galvin | Helper's Name: Jerry Voight
Ground Elevation: 49.70' | Inspector's Name: Bryan Zimolka | Inspector's Company: Howard/Stein - Hudson (HSH)

Sample Number	Depth Range (Feet)	Blow Counts per 6 Inches Coring Times Minute Per Foot				Recovery Inches	Field Description	Strata Changes
							ASPHALT	9"
S-1	9" - 2'9"	35	31	20	14	16	Dry, very dense, brown FINE TO COARSE SAND.	
S-2	2'9" - 4'9"	9	13	10	8	12.5"	Dry, medium dense, brown FINE TO COARSE SAND, trace styrofoam fragments.	4'9"
							Bottom of Exploration = 4'9"	

Notes:
4" Coreborer

Penetration Resistance (N) Guide:			
Cohesionless Soils (Sands, Gravels)		Cohesive Soils (Silts, Clays)	
Relative Density	Penetration Resistance	Consistency	Penetration Resistance
Very Loose	0 - 4	Very Soft	0 - 2
Loose	4 - 10	Soft	2 - 4
Medium Dense	10 - 30	Medium Stiff	4 - 8
Dense	30 - 50	Stiff	8 - 15
Very Dense	Over 50	Very Stiff	15 - 30
N=Sum of Second and Third 6" Blow Counts		Hard	Over 30

Terms Used for Second Entry of Descriptions: and = 40-50%, some = 10-40%, trace = 10% or less

Protective Device - Stand: Box:
Well Depth: Solid Pipe:
Stick Up Pipe: Screen Pipe:
Type of Drill Rig: M-2 Track Rig
4" thin wall core borer Depth:
Signs: Cones: Arrow-Board:
Sampler Type: S/S Size: 1 3/8 "
Automatic Hammer Weight:
Safety Hammer Weight: 140 lbs
Donut Hammer Weight: Fall: 30"
Core Barrel Type: Size:

NEW HAMPSHIRE BORING, INC. P.O. Box 165 Derry, NH 03038	Phone: (603)437-1610 Fax: (603) 437-0034 E Mail: nhb@nhboring.com	Boring No. B-3 Scale 1" = 5'

City/Town: Chatham | Borings | Project File No: 606596 | Contract No: 77142
Project: Route 28 (Main Street) from George Ryder Road to Barn Hill Road | Date & Time Started: 5/19/15 11:52 am | Total Hours:
Groundwater Depth: None Encountered | Date & Time: | Date & Time Completed: 5/19/15 12:04 pm | 12 min
Coordinates: N 2712873.97 E 1068170.36 | Driller's Name: John Galvin | Helper's Name: Jerry Voight
Ground Elevation: 48.843' | Inspector's Name: Bryan Zimolka | Inspector's Company: Howard/Stein - Hudson (HSH)

Sample Number	Depth Range (Feet)	Blow Counts per 6 Inches Coring Times Minute Per Foot				Recovery Inches	Field Description	Strata Changes
							ASPHALT	5.5"
S-1	5.5" - 2'5.5"	45	39	17	15	8.5"	Dry, very dense, brown FINE TO COARSE SAND.	
S-2	2'5.5" - 4'5.5"	12	8	6	8	9"	Dry, medium dense, brown FINE TO COARSE SAND.	4'5.5"
							Bottom of Exploration = 4'5.5"	

Notes:
4" Coreborer

Penetration Resistance (N) Guide:			
Cohesionless Soils (Sands, Gravels)		Cohesive Soils (Silts, Clays)	
Relative Density	Penetration Resistance	Consistency	Penetration Resistance
Very Loose	0 - 4	Very Soft	0 - 2
Loose	4 - 10	Soft	2 - 4
Medium Dense	10 - 30	Medium Stiff	4 - 8
Dense	30 - 50	Stiff	8 - 15
Very Dense	Over 50	Very Stiff	15 - 30
N=Sum of Second and Third 6" Blow Counts		Hard	Over 30

Terms Used for Second Entry of Descriptions: and = 40-50%, some = 10-40%, trace = 10% or less

Protective Device - Stand: Box:
Well Depth: Solid Pipe:
Stick Up Pipe: Screen Pipe:
Type of Drill Rig: M-2 Track Rig
4" thin wall core borer Depth:
Signs: Cones: Arrow-Board:
Sampler Type: S/S Size: 1 3/8 "
Automatic Hammer Weight:
Safety Hammer Weight: 140 lbs
Donut Hammer Weight: Fall: 30"
Core Barrel Type: Size:

NEW HAMPSHIRE BORING, INC. P.O. Box 165 Derry, NH 03038	Phone: (603)437-1610 Fax: (603) 437-0034 E Mail: nhb@nhboring.com	Boring No. PC-1 Scale 1" = 5'

City/Town: Chatham | Pavement Core | Project File No: 606596 | Contract No: 77142
Project: Route 28 (Main Street) from George Ryder Road to Barn Hill Road | Date & Time Started: 5/18/15 9:00 am | Total Hours:
Groundwater Depth: None Encountered | Date & Time: | Date & Time Completed: 5/18/15 10:10 am | 1 hr., 10 min.
Coordinates: N 2713233.30 E 1066938.98 | Driller's Name: John Galvin | Helper's Name: Jerry Voight
Ground Elevation: 41.53' | Inspector's Name: Bryan Zimolka | Inspector's Company: Howard/Stein - Hudson (HSH)

Sample Number	Depth Range (Feet)	Blow Counts per 6 Inches Coring Times Minute Per Foot				Recovery Inches	Field Description	Strata Changes
							ASPHALT	9"
S-1	9" - 2'9"	38	31	23	21	18"	Dry, very dense, tan FINE SAND, some coarse sand.	
S-2	2'9" - 4'9"	14	8	8	9	14"	Dry, medium dense, tan, FINE SAND, some coarse sand.	4'9"
							Bottom of Pavement Core = 4'9"	

Notes:
Sample S-1 taken with 3" split spoon.
4" Coreborer

Penetration Resistance (N) Guide:			
Cohesionless Soils (Sands, Gravels)		Cohesive Soils (Silts, Clays)	
Relative Density	Penetration Resistance	Consistency	Penetration Resistance
Very Loose	0 - 4	Very Soft	0 - 2
Loose	4 - 10	Soft	2 - 4
Medium Dense	10 - 30	Medium Stiff	4 - 8
Dense	30 - 50	Stiff	8 - 15
Very Dense	Over 50	Very Stiff	15 - 30
N=Sum of Second and Third 6" Blow Counts		Hard	Over 30

Terms Used for Second Entry of Descriptions: and = 40-50%, some = 10-40%, trace = 10% or less

Protective Device - Stand: Box:
Well Depth: Solid Pipe:
Stick Up Pipe: Screen Pipe:
Type of Drill Rig: M-2 Track Rig
4" thin wall core borer Depth:
Signs: Cones: Arrow-Board:
Sampler Type: S/S Size: 1 3/8 "
Automatic Hammer Weight:
Safety Hammer Weight: 140 lbs
Donut Hammer Weight: Fall: 30"
Core Barrel Type: Size:

NEW HAMPSHIRE BORING, INC. P.O. Box 165 Derry, NH 03038	Phone: (603)437-1610 Fax: (603) 437-0034 E Mail: nhb@nhboring.com	Boring No. PC-2 Scale 1" = 5'

City/Town: Chatham | Pavement Core | Project File No: 606596 | Contract No: 77142
Project: Route 28 (Main Street) from George Ryder Road to Barn Hill Road | Date & Time Started: 5/18/15 1:05 pm | Total Hours:
Groundwater Depth: None Encountered | Date & Time: | Date & Time Completed: 5/18/15 1:19 pm | 14 min
Coordinates: N 2713320.90 E 1067094.03 | Driller's Name: John Galvin | Helper's Name: Jerry Voight
Ground Elevation: 38.74' | Inspector's Name: Bryan Zimolka | Inspector's Company: Howard/Stein - Hudson (HSH)

Sample Number	Depth Range (Feet)	Blow Counts per 6 Inches Coring Times Minute Per Foot				Recovery Inches	Field Description	Strata Changes
							ASPHALT	3"
S-1	3" - 2'3"	20	20	18	26	11"	Dry, dense, brown FINE SAND, some coarse sand, some fine to medium gravel.	
S-2	2'3" - 4'3"	25	21	17	14	13"	Dry, dense, brown FINE TO COARSE SAND, some fine gravel.	4'3"
							Bottom of Pavement Core = 4'3"	

Notes:
4" Coreborer

Penetration Resistance (N) Guide:			
Cohesionless Soils (Sands, Gravels)		Cohesive Soils (Silts, Clays)	
Relative Density	Penetration Resistance	Consistency	Penetration Resistance
Very Loose	0 - 4	Very Soft	0 - 2
Loose	4 - 10	Soft	2 - 4
Medium Dense	10 - 30	Medium Stiff	4 - 8
Dense	30 - 50	Stiff	8 - 15
Very Dense	Over 50	Very Stiff	15 - 30
N=Sum of Second and Third 6" Blow Counts		Hard	Over 30

Terms Used for Second Entry of Descriptions: and = 40-50%, some = 10-40%, trace = 10% or less

Protective Device - Stand: Box:
Well Depth: Solid Pipe:
Stick Up Pipe: Screen Pipe:
Type of Drill Rig: M-2 Track Rig
4" thin wall core borer Depth:
Signs: Cones: Arrow-Board:
Sampler Type: S/S Size: 1 3/8 "
Automatic Hammer Weight:
Safety Hammer Weight: 140 lbs
Donut Hammer Weight: Fall: 30"
Core Barrel Type: Size:

NEW HAMPSHIRE BORING, INC. P.O. Box 165 Derry, NH 03038	Phone: (603)437-1610 Fax: (603) 437-0034 E Mail: nhb@nhboring.com	Boring No. PC-3 Scale 1" = 5'

City/Town: Chatham | Pavement Core | Project File No: 606596 | Contract No: 77142
Project: Route 28 (Main Street) from George Ryder Road to Barn Hill Road | Date & Time Started: 5/18/15 1:37 pm | Total Hours:
Groundwater Depth: None Encountered | Date & Time: | Date & Time Completed: 5/18/15 1:49 pm | 12 min
Coordinates: N 2713096.47 E 1066937.75 | Driller's Name: John Galvin | Helper's Name: Jerry Voight
Ground Elevation: 39.83' | Inspector's Name: Bryan Zimolka | Inspector's Company: Howard/Stein - Hudson (HSH)

Sample Number	Depth Range (Feet)	Blow Counts per 6 Inches Coring Times Minute Per Foot				Recovery Inches	Field Description	Strata Changes
							ASPHALT	4"
S-1	4" - 2'4"	17	13	9	10	18"	Dry, medium dense, brown FINE TO COARSE SAND, some fine to medium gravel.	
S-2	2'4" - 4'4"	10	8	8	10	20"	Dry, medium dense, brown FINE TO COARSE SAND, some fine to medium gravel.	4'4"
							Bottom of Pavement Core = 4'4"	

Notes:
4" Coreborer

Penetration Resistance (N) Guide:			
Cohesionless Soils (Sands, Gravels)		Cohesive Soils (Silts, Clays)	
Relative Density	Penetration Resistance	Consistency	Penetration Resistance
Very Loose	0 - 4	Very Soft	0 - 2
Loose	4 - 10	Soft	2 - 4
Medium Dense	10 - 30	Medium Stiff	4 - 8
Dense	30 - 50	Stiff	8 - 15
Very Dense	Over 50	Very Stiff	15 - 30
N=Sum of Second and Third 6" Blow Counts		Hard	Over 30

Terms Used for Second Entry of Descriptions: and = 40-50%, some = 10-40%, trace = 10% or less

Protective Device - Stand: Box:
Well Depth: Solid Pipe:
Stick Up Pipe: Screen Pipe:
Type of Drill Rig: M-2 Track Rig
4" thin wall core borer Depth:
Signs: Cones: Arrow-Board:
Sampler Type: S/S Size: 1 3/8 "
Automatic Hammer Weight:
Safety Hammer Weight: 140 lbs
Donut Hammer Weight: Fall: 30"
Core Barrel Type: Size:

NEW HAMPSHIRE BORING, INC. P.O. Box 165 Derry, NH 03038	Phone: (603)437-1610 Fax: (603) 437-0034 E Mail: nhb@nhboring.com	Boring No. PC-4 Scale 1" = 5'

City/Town: Chatham | Pavement Core | Project File No: 606596 | Contract No: 77142
Project: Route 28 (Main Street) from George Ryder Road to Barn Hill Road | Date & Time Started: 5/18/15 11:58 am | Total Hours:
Groundwater Depth: None Encountered | Date & Time: | Date & Time Completed: 5/18/15 12:15 pm | 17 min
Coordinates: N 2713096.92 E 1067181.52 | Driller's Name: John Galvin | Helper's Name: Jerry Voight
Ground Elevation: 39.10' | Inspector's Name: Bryan Zimolka | Inspector's Company: Howard/Stein - Hudson (HSH)

Sample Number	Depth Range (Feet)	Blow Counts per 6 Inches Coring Times Minute Per Foot				Recovery Inches	Field Description	Strata Changes
							ASPHALT	9"
S-1	9" - 2'9"	14	17	14	11	18"	Dry, dense, brown FINE TO COARSE SAND, some fine gravel.	
S-2	2'9" - 4'9"	8	6	5	5	20"	Dry, medium dense, brown FINE TO COARSE SAND, some fine gravel.	4'9"
							Bottom of Pavement Core = 4'9"	

Notes:
4" Coreborer

Penetration Resistance (N) Guide:			
Cohesionless Soils (Sands, Gravels)		Cohesive Soils (Silts, Clays)	
Relative Density	Penetration Resistance	Consistency	Penetration Resistance
Very Loose	0 - 4	Very Soft	0 - 2
Loose	4 - 10	Soft	2 - 4
Medium Dense	10 - 30	Medium Stiff	4 - 8
Dense	30 - 50	Stiff	8 - 15
Very Dense	Over 50	Very Stiff	15 - 30
N=Sum of Second and Third 6" Blow Counts		Hard	Over 30

Terms Used for Second Entry of Descriptions: and = 40-50%, some = 10-40%, trace = 10% or less

Protective Device - Stand: Box:
Well Depth: Solid Pipe:
Stick Up Pipe: Screen Pipe:
Type of Drill Rig: M-2 Track Rig
4" thin wall core borer Depth:
Signs: Cones: Arrow-Board:
Sampler Type: S/S Size: 1 3/8 "
Automatic Hammer Weight:
Safety Hammer Weight: 140 lbs
Donut Hammer Weight: Fall: 30"
Core Barrel Type: Size:

606596_HD(BORING).DWG Plotted on 30-Mar-2018 1:45 PM

CHATHAM
MAIN STREET (ROUTE 28) FROM GEORGE RYDER ROAD TO BARN HILL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	6	109
PROJECT FILE NO.	606596		

BORING PLANS

NEW HAMPSHIRE BORING, INC.
P.O. Box 165
Derry, NH 03038
Phone: (603)437-1610
Fax: (603) 437-0034
E Mail: nhb@nhboring.com

Boring No. PC-5
Scale 1" = 5'

City/Town: Chatham | Pavement Core | Project File No: 606596 | Contract No: 77142
Project: Route 28 (Main Street) from George Ryder Road to Barn Hill Road | Date & Time Started: 5/18/15 10:47 am | Total Hours:
Groundwater Depth: None Encountered Date & Time: | Date & Time Completed: 5/18/15 11:00 am | 13 min
Coordinates: N 2713074.91 E 1067189.97 | Driller's Name: John Galvin | Helper's Name: Jerry Voight
Ground Elevation: 40.038' | Inspector's Name: Bryan Zimolka | Inspector's Company: Howard/Stein - Hudson (HSH)

Sample Number	Depth Range (Feet)	Blow Counts per 6 Inches Coring Times Minute Per Foot				Recovery Inches	Field Description	Strata Changes
							ASPHALT 9"	
S-1	9" - 2'9"	38	40	37	32	24"	Dry, very dense, brown FINE TO COARSE SAND, trace asphalt fragments.	
S-2	2'9" - 4'3"	7	8	13		18"	Dry, medium dense, brown FINE TO COARSE SAND.	4'3"
							Bottom of Pavement Core = 4'3"	

Notes:
Sample S-1 taken with 3" split spoon.
4" Coreborer

Protective Device - Stand: Box:
Well Depth: Solid Pipe:
Stick Up Pipe: Screen Pipe:
Type of Drill Rig: M-2 Track Rig
4" thin wall core borer Depth:
Signs: Cones: Arrow-Board:
Sampler Type: S/S Size: 1 3/8 "
Automatic Hammer Weight:
Safety Hammer Weight: 140 lbs
Donut Hammer Weight: Fall: 30"
Core Barrel Type: Size:

Penetration Resistance (N) Guide:

Cohesionless Soils (Sands, Gravels)		Cohesive Soils (Silts, Clays)	
Relative Density	Penetration Resistance	Consistency	Penetration Resistance
Very Loose	0 - 4	Very Soft	0 - 2
Loose	4 - 10	Soft	2 - 4
Medium Dense	10 - 30	Medium Stiff	4 - 8
Dense	30 - 50	Stiff	8 - 15
Very Dense	Over 50	Very Stiff	15 - 30
N=Sum of Second and Third 6" Blow Counts		Hard	Over 30

Terms Used for Second Entry of Descriptions: and = 40-50%, some = 10-40%, trace = 10% or less

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NEW HAMPSHIRE BORING, INC.
P.O. Box 165
Derry, NH 03038
Phone: (603)437-1610
Fax: (603) 437-0034
E Mail: nhb@nhboring.com

Boring No. PC-6
Scale 1" = 5'

City/Town: Chatham | Pavement Core | Project File No: 606596 | Contract No: 77142
Project: Route 28 (Main Street) from George Ryder Road to Barn Hill Road | Date & Time Started: 5/18/15 2:18 pm | Total Hours:
Groundwater Depth: None Encountered Date & Time: | Date & Time Completed: 5/18/15 2:21 pm | 3 min
Coordinates: N 2712989.40 E 1067515.15 | Driller's Name: John Galvin | Helper's Name: Jerry Voight
Ground Elevation: 46.61' | Inspector's Name: Bryan Zimolka | Inspector's Company: Howard/Stein - Hudson (HSH)

Sample Number	Depth Range (Feet)	Blow Counts per 6 Inches Coring Times Minute Per Foot	Recovery Inches	Field Description	Strata Changes
				ASPHALT 7"	
				Bottom of Pavement Core = 7"	

Notes:
Took pavement core only because of under ground utilities; gas and verizon.
4" Coreborer

Protective Device - Stand: Box:
Well Depth: Solid Pipe:
Stick Up Pipe: Screen Pipe:
Type of Drill Rig: M-2 Track Rig
4" thin wall core borer Depth:
Signs: Cones: Arrow-Board:
Sampler Type: Size:
Automatic Hammer Weight:
Safety Hammer Weight:
Donut Hammer Weight: Fall:
Core Barrel Type: Size:

Penetration Resistance (N) Guide:

Cohesionless Soils (Sands, Gravels)		Cohesive Soils (Silts, Clays)	
Relative Density	Penetration Resistance	Consistency	Penetration Resistance
Very Loose	0 - 4	Very Soft	0 - 2
Loose	4 - 10	Soft	2 - 4
Medium Dense	10 - 30	Medium Stiff	4 - 8
Dense	30 - 50	Stiff	8 - 15
Very Dense	Over 50	Very Stiff	15 - 30
N=Sum of Second and Third 6" Blow Counts		Hard	Over 30

Terms Used for Second Entry of Descriptions: and = 40-50%, some = 10-40%, trace = 10% or less

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NEW HAMPSHIRE BORING, INC.
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Derry, NH 03038
Phone: (603)437-1610
Fax: (603) 437-0034
E Mail: nhb@nhboring.com

Boring No. PC-7
Scale 1" = 5'

City/Town: Chatham | Pavement Core | Project File No: 606596 | Contract No: 77142
Project: Route 28 (Main Street) from George Ryder Road to Barn Hill Road | Date & Time Started: 5/18/15 2:35 pm | Total Hours:
Groundwater Depth: None Encountered Date & Time: | Date & Time Completed: 5/18/15 2:45 pm | 10 min
Coordinates: N 2712994.57 E 1067669.41 | Driller's Name: John Galvin | Helper's Name: Jerry Voight
Ground Elevation: 49.237' | Inspector's Name: Bryan Zimolka | Inspector's Company: Howard/Stein - Hudson (HSH)

Sample Number	Depth Range (Feet)	Blow Counts per 6 Inches Coring Times Minute Per Foot				Recovery Inches	Field Description	Strata Changes
							ASPHALT 9"	
S-1	9" - 2'9"	25	18	11	9	16	Dry, medium dense, brown FINE TO COARSE SAND, some medium to fine gravel.	
S-2	2'9" - 4'9"	89	5	5	6	13.5"	Dry, medium dense, brown FINE TO COARSE SAND, some medium to fine gravel.	4'9"
							Bottom of Pavement Core = 4'9"	

Notes:
4" Coreborer

Protective Device - Stand: Box:
Well Depth: Solid Pipe:
Stick Up Pipe: Screen Pipe:
Type of Drill Rig: M-2 Track Rig
4" thin wall core borer Depth:
Signs: Cones: Arrow-Board:
Sampler Type: S/S Size: 1 3/8 "
Automatic Hammer Weight:
Safety Hammer Weight: 140 lbs
Donut Hammer Weight: Fall: 30"
Core Barrel Type: Size:

Penetration Resistance (N) Guide:

Cohesionless Soils (Sands, Gravels)		Cohesive Soils (Silts, Clays)	
Relative Density	Penetration Resistance	Consistency	Penetration Resistance
Very Loose	0 - 4	Very Soft	0 - 2
Loose	4 - 10	Soft	2 - 4
Medium Dense	10 - 30	Medium Stiff	4 - 8
Dense	30 - 50	Stiff	8 - 15
Very Dense	Over 50	Very Stiff	15 - 30
N=Sum of Second and Third 6" Blow Counts		Hard	Over 30

Terms Used for Second Entry of Descriptions: and = 40-50%, some = 10-40%, trace = 10% or less

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Boring No. PC-8
Scale 1" = 5'

City/Town: Chatham | Pavement Core | Project File No: 606596 | Contract No: 77142
Project: Route 28 (Main Street) from George Ryder Road to Barn Hill Road | Date & Time Started: 5/19/15 10:00 am | Total Hours:
Groundwater Depth: None Encountered Date & Time: | Date & Time Completed: 5/19/15 10:12 am | 12 min
Coordinates: N 2712996.07 E 1067907.65 | Driller's Name: John Galvin | Helper's Name: Jerry Voight
Ground Elevation: 50.49 | Inspector's Name: Bryan Zimolka | Inspector's Company: Howard/Stein - Hudson (HSH)

Sample Number	Depth Range (Feet)	Blow Counts per 6 Inches Coring Times Minute Per Foot				Recovery Inches	Field Description	Strata Changes
							ASPHALT 7"	
S-1	7" - 2'7"	25	19	18	13	18"	Dry, dense, brown, FINE TO COARSE SAND.	
S-2	2'7" - 4'7"	7	10	6	7	12"	Dry, medium dense, brown FINE TO COARSE SAND.	4'7"
							Bottom of Pavement Core = 4'7"	

Notes:
4" Coreborer

Protective Device - Stand: Box:
Well Depth: Solid Pipe:
Stick Up Pipe: Screen Pipe:
Type of Drill Rig: M-2 Track Rig
4" thin wall core borer Depth:
Signs: Cones: Arrow-Board:
Sampler Type: S/S Size: 1 3/8 "
Automatic Hammer Weight:
Safety Hammer Weight: 140 lbs
Donut Hammer Weight: Fall: 30"
Core Barrel Type: Size:

Penetration Resistance (N) Guide:

Cohesionless Soils (Sands, Gravels)		Cohesive Soils (Silts, Clays)	
Relative Density	Penetration Resistance	Consistency	Penetration Resistance
Very Loose	0 - 4	Very Soft	0 - 2
Loose	4 - 10	Soft	2 - 4
Medium Dense	10 - 30	Medium Stiff	4 - 8
Dense	30 - 50	Stiff	8 - 15
Very Dense	Over 50	Very Stiff	15 - 30
N=Sum of Second and Third 6" Blow Counts		Hard	Over 30

Terms Used for Second Entry of Descriptions: and = 40-50%, some = 10-40%, trace = 10% or less

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Boring No. PC-9
Scale 1" = 5'

City/Town: Chatham | Pavement Core | Project File No: 606596 | Contract No: 77142
Project: Route 28 (Main Street) from George Ryder Road to Barn Hill Road | Date & Time Started: 5/19/15 10:30 am | Total Hours:
Groundwater Depth: None Encountered Date & Time: | Date & Time Completed: 5/19/15 10:43 am | 13 min
Coordinates: N 2712969.28 E 1068087.49 | Driller's Name: John Galvin | Helper's Name: Jerry Voight
Ground Elevation: 50.297 | Inspector's Name: Bryan Zimolka | Inspector's Company: Howard/Stein - Hudson (HSH)

Sample Number	Depth Range (Feet)	Blow Counts per 6 Inches Coring Times Minute Per Foot				Recovery Inches	Field Description	Strata Changes
							ASPHALT 8"	
S-1	8" - 2'8"	34	26	17	18	14"	Dry, medium dense, brown FINE TO COARSE SAND.	
S-2	2'8" - 4'8"	10	12	8	4	10"	Dry, medium dense, brown COARSE TO FINE SAND.	4'8"
							Bottom of Pavement Core = 4'8"	

Notes:
4" Coreborer

Protective Device - Stand: Box:
Well Depth: Solid Pipe:
Stick Up Pipe: Screen Pipe:
Type of Drill Rig: M-2 Track Rig
4" thin wall core borer Depth:
Signs: Cones: Arrow-Board:
Sampler Type: S/S Size: 1 3/8 "
Automatic Hammer Weight:
Safety Hammer Weight: 140 lbs
Donut Hammer Weight: Fall: 30"
Core Barrel Type: Size:

Penetration Resistance (N) Guide:

Cohesionless Soils (Sands, Gravels)		Cohesive Soils (Silts, Clays)	
Relative Density	Penetration Resistance	Consistency	Penetration Resistance
Very Loose	0 - 4	Very Soft	0 - 2
Loose	4 - 10	Soft	2 - 4
Medium Dense	10 - 30	Medium Stiff	4 - 8
Dense	30 - 50	Stiff	8 - 15
Very Dense	Over 50	Very Stiff	15 - 30
N=Sum of Second and Third 6" Blow Counts		Hard	Over 30

Terms Used for Second Entry of Descriptions: and = 40-50%, some = 10-40%, trace = 10% or less

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Boring No. PC-10
Scale 1" = 5'

City/Town: Chatham | Pavement Core | Project File No: 606596 | Contract No: 77142
Project: Route 28 (Main Street) from George Ryder Road to Barn Hill Road | Date & Time Started: 5/19/15 10:56 am | Total Hours:
Groundwater Depth: None Encountered Date & Time: | Date & Time Completed: 5/19/15 11.08 am | 12 min
Coordinates: N 2712978.82 E 1068250.06 | Driller's Name: John Galvin | Helper's Name: Jerry Voight
Ground Elevation: 50.81' | Inspector's Name: Bryan Zimolka | Inspector's Company: Howard/Stein - Hudson (HSH)

Sample Number	Depth Range (Feet)	Blow Counts per 6 Inches Coring Times Minute Per Foot				Recovery Inches	Field Description	Strata Changes
							ASPHALT 7"	
S-1	7" - 2'7"	13	14	14	9	13"	Dry, medium dense, brown COARSE TO FINE SAND.	
S-2	2'7" - 4'7"	6	5	4	3	15"	Dry, loose, light brown FINE SAND.	4'7"
							Bottom of Pavement Core = 4'7"	

Notes:
4" Coreborer

Protective Device - Stand: Box:
Well Depth: Solid Pipe:
Stick Up Pipe: Screen Pipe:
Type of Drill Rig: M-2 Track Rig
4" thin wall core borer Depth:
Signs: Cones: Arrow-Board:
Sampler Type: S/S Size: 1 3/8 "
Automatic Hammer Weight:
Safety Hammer Weight: 140 lbs
Donut Hammer Weight: Fall: 30"
Core Barrel Type: Size:

Penetration Resistance (N) Guide:

Cohesionless Soils (Sands, Gravels)		Cohesive Soils (Silts, Clays)	
Relative Density	Penetration Resistance	Consistency	Penetration Resistance
Very Loose	0 - 4	Very Soft	0 - 2
Loose	4 - 10	Soft	2 - 4
Medium Dense	10 - 30	Medium Stiff	4 - 8
Dense	30 - 50	Stiff	8 - 15
Very Dense	Over 50	Very Stiff	15 - 30
N=Sum of Second and Third 6" Blow Counts		Hard	Over 30

Terms Used for Second Entry of Descriptions: and = 40-50%, some = 10-40%, trace = 10% or less

CHATHAM
MAIN STREET (ROUTE 28) FROM GEORGE RYDER ROAD TO BARN HILL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	7	109
PROJECT FILE NO. 606596			

BORING PLANS

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Boring No. PC-11
Scale 1" = 5'

City/Town: Chatham
Pavement Core
Project File No: 606596
Contract No: 77142
Project: Route 28 (Main Street) from George Ryder Road to Barn Hill Road
Date & Time Started: 5/19/15 12:20 pm
Total Hours: 8 min
Groundwater Depth: None Encountered
Date & Time:
Date & Time Completed: 5/19/15 12:28 pm
Coordinates: N 2712756.57 E 1068215.62
Driller's Name: John Galvin
Helper's Name: Jerry Voight
Ground Elevation: 48.02'
Inspector's Name: Bryan Zimolka
Inspector's Company: Howard/Stein - Hudson (HSH)

Sample Number	Depth Range (Feet)	Blow Counts per 6 Inches Coring Times Minute Per Foot				Recovery Inches	Field Description	Strata Changes
							ASPHALT 5"	
S-1	5" - 2'5"	82	48	8	10	8"	Dry, very dense, brown FINE TO COARSE SAND, some fine to medium gravel.	
S-2	2'5" - 4'5"	11	6	5	7	12"	Dry, medium dense, brown COARSE TO FINE SAND.	4'5"
							Bottom of Pavement Core = 4'5"	

Notes:
4" Coreborer

Protective Device - Stand: Box:
Well Depth: Solid Pipe:
Stick Up Pipe: Screen Pipe:
Type of Drill Rig: M-2 Track Rig
4" thin wall core borer Depth:
Signs: Cones: Arrow-Board:
Sampler Type: S/S Size: 1 3/8 "
Automatic Hammer Weight:
Safety Hammer Weight: 140 lbs
Donut Hammer Weight: Fall: 30"
Core Barrel Type: Size:

Penetration Resistance (N) Guide:

Cohesionless Soils (Sands, Gravels)		Cohesive Soils (Silts, Clays)	
Relative Density	Penetration Resistance	Consistency	Penetration Resistance
Very Loose	0 - 4	Very Soft	0 - 2
Loose	4 - 10	Soft	2 - 4
Medium Dense	10 - 30	Medium Stiff	4 - 8
Dense	30 - 50	Stiff	8 - 15
Very Dense	Over 50	Very Stiff	15 - 30
N=Sum of Second and Third 6" Blow Counts		Hard	Over 30

Terms Used for Second Entry of Descriptions: and = 40-50%, some = 10-40%, trace = 10% or less

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Boring No. PC-12
Scale 1" = 5'

City/Town: Chatham
Pavement Core
Project File No: 606596
Contract No: 77142
Project: Route 28 (Main Street) from George Ryder Road to Barn Hill Road
Date & Time Started: 5/19/15 11:20 am
Total Hours: 15 min
Groundwater Depth: None Encountered
Date & Time:
Date & Time Completed: 5/19/15 11:35 am
Coordinates: N 2712995.97 E 1068505.09
Driller's Name: John Galvin
Helper's Name: Jerry Voight
Ground Elevation: 53.21'
Inspector's Name: Bryan Zimolka
Inspector's Company: Howard/Stein - Hudson (HSH)

Sample Number	Depth Range (Feet)	Blow Counts per 6 Inches Coring Times Minute Per Foot				Recovery Inches	Field Description	Strata Changes
							ASPHALT 7"	
S-1	7" - 2'7"	25	18	13	9	15"	Dry, dense, brown FINE TO COARSE SAND.	
S-2	2'7" - 4'7"	8	6	4	8	8"	Dry, loose, brown FINE TO COARSE SAND, some fine to medium gravel.	4'7"
							Bottom of Pavement Core = 4'7"	

Notes:
4" Coreborer

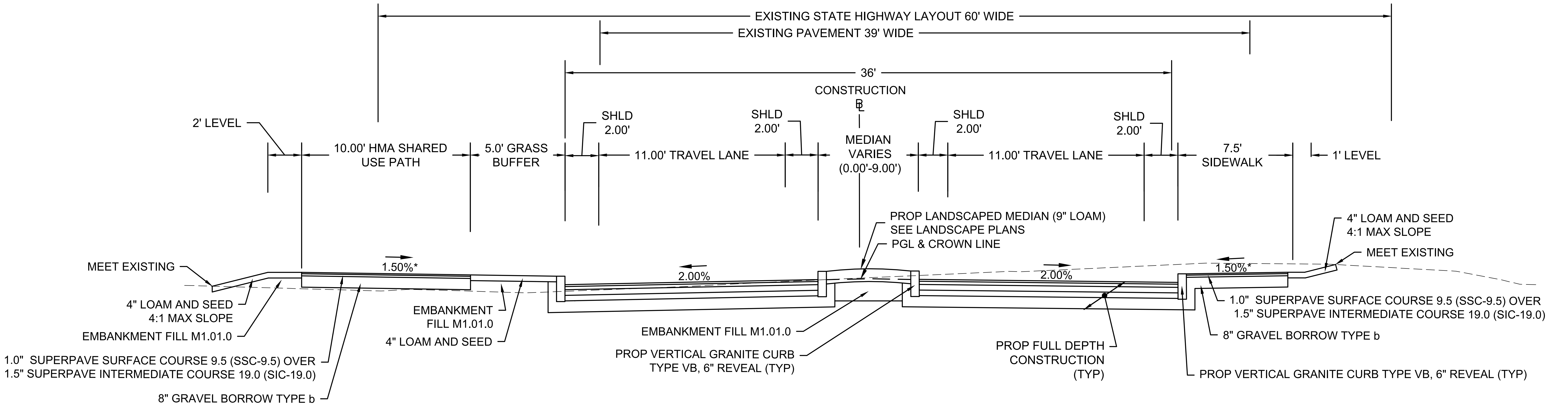
Protective Device - Stand: Box:
Well Depth: Solid Pipe:
Stick Up Pipe: Screen Pipe:
Type of Drill Rig: M-2 Track Rig
4" thin wall core borer Depth:
Signs: Cones: Arrow-Board:
Sampler Type: S/S Size: 1 3/8 "
Automatic Hammer Weight:
Safety Hammer Weight: 140 lbs
Donut Hammer Weight: Fall: 30"
Core Barrel Type: Size:

Penetration Resistance (N) Guide:

Cohesionless Soils (Sands, Gravels)		Cohesive Soils (Silts, Clays)	
Relative Density	Penetration Resistance	Consistency	Penetration Resistance
Very Loose	0 - 4	Very Soft	0 - 2
Loose	4 - 10	Soft	2 - 4
Medium Dense	10 - 30	Medium Stiff	4 - 8
Dense	30 - 50	Stiff	8 - 15
Very Dense	Over 50	Very Stiff	15 - 30
N=Sum of Second and Third 6" Blow Counts		Hard	Over 30

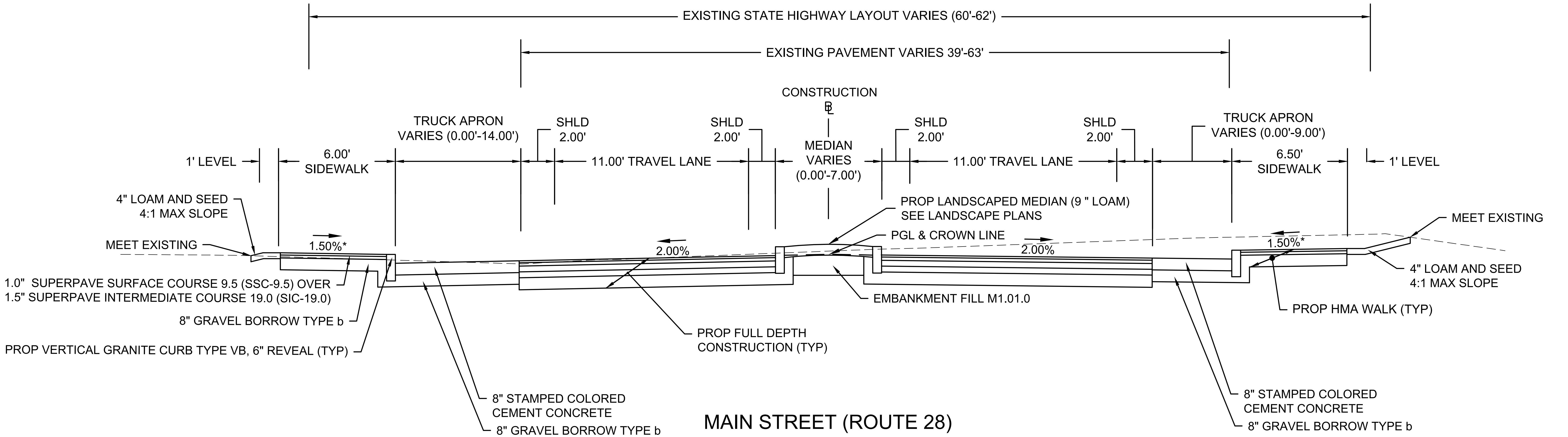
Terms Used for Second Entry of Descriptions: and = 40-50%, some = 10-40%, trace = 10% or less

606596_HD(BORING).DWG Plotted on 30-Mar-2018 1:45 PM



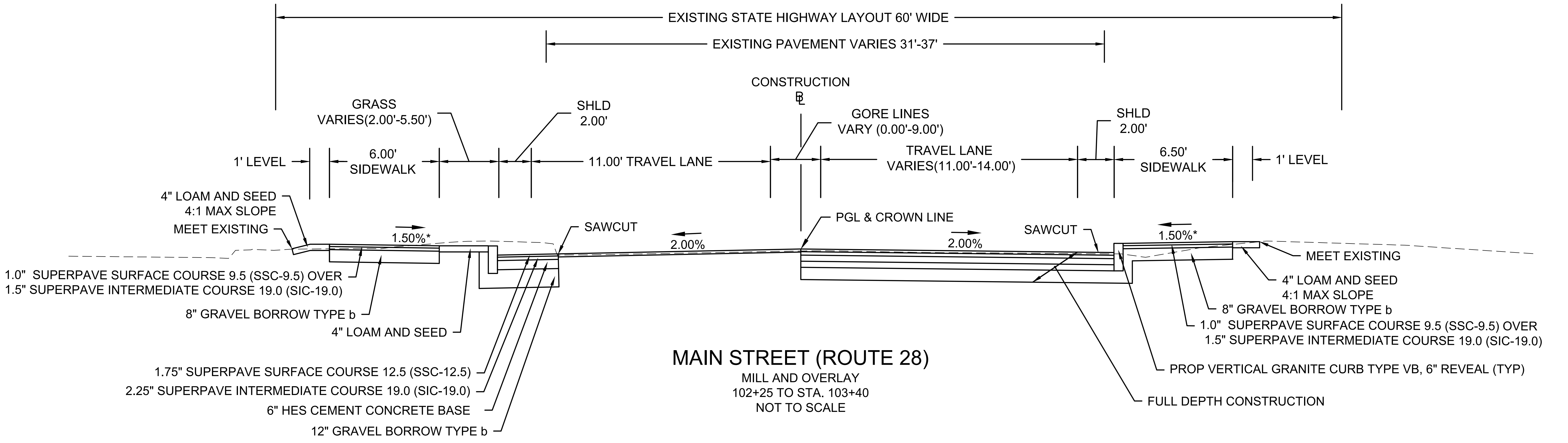
EXISTING STATE HIGHWAY LAYOUT 60' WIDE
EXISTING PAVEMENT 39' WIDE
36'
CONSTRUCTION ℄
2' LEVEL
10.00' HMA SHARED USE PATH
5.0' GRASS BUFFER
SHLD 2.00'
11.00' TRAVEL LANE
SHLD 2.00'
MEDIAN VARIES (0.00'-9.00')
SHLD 2.00'
11.00' TRAVEL LANE
SHLD 2.00'
7.5' SIDEWALK
1' LEVEL
PROP LANDSCAPED MEDIAN (9" LOAM) SEE LANDSCAPE PLANS
PGL & CROWN LINE
4" LOAM AND SEED 4:1 MAX SLOPE
MEET EXISTING
MEET EXISTING
1.50%*
2.00%
2.00%
1.50%*
4" LOAM AND SEED 4:1 MAX SLOPE
EMBANKMENT FILL M1.01.0
EMBANKMENT FILL M1.01.0
4" LOAM AND SEED
EMBANKMENT FILL M1.01.0
1.0" SUPERPAVE SURFACE COURSE 9.5 (SSC-9.5) OVER 1.5" SUPERPAVE INTERMEDIATE COURSE 19.0 (SIC-19.0)
8" GRAVEL BORROW TYPE b
PROP VERTICAL GRANITE CURB TYPE VB, 6" REVEAL (TYP)
PROP FULL DEPTH CONSTRUCTION (TYP)
1.0" SUPERPAVE SURFACE COURSE 9.5 (SSC-9.5) OVER 1.5" SUPERPAVE INTERMEDIATE COURSE 19.0 (SIC-19.0)
8" GRAVEL BORROW TYPE b
PROP VERTICAL GRANITE CURB TYPE VB, 6" REVEAL (TYP)

MAIN STREET (ROUTE 28)
FULL DEPTH RECONSTRUCTION
STA. 105+27 TO STA. 105+98
NOT TO SCALE



EXISTING STATE HIGHWAY LAYOUT VARIES (60'-62')
EXISTING PAVEMENT VARIES 39'-63'
CONSTRUCTION ℄
TRUCK APRON VARIES (0.00'-14.00')
SHLD 2.00'
SHLD 2.00'
MEDIAN VARIES (0.00'-7.00')
SHLD 2.00'
SHLD 2.00'
TRUCK APRON VARIES (0.00'-9.00')
1' LEVEL
6.00' SIDEWALK
11.00' TRAVEL LANE
11.00' TRAVEL LANE
6.50' SIDEWALK
1' LEVEL
4" LOAM AND SEED 4:1 MAX SLOPE
PROP LANDSCAPED MEDIAN (9 " LOAM) SEE LANDSCAPE PLANS
PGL & CROWN LINE
MEET EXISTING
MEET EXISTING
1.50%*
2.00%
2.00%
1.50%*
4" LOAM AND SEED 4:1 MAX SLOPE
1.0" SUPERPAVE SURFACE COURSE 9.5 (SSC-9.5) OVER 1.5" SUPERPAVE INTERMEDIATE COURSE 19.0 (SIC-19.0)
8" GRAVEL BORROW TYPE b
PROP VERTICAL GRANITE CURB TYPE VB, 6" REVEAL (TYP)
EMBANKMENT FILL M1.01.0
PROP HMA WALK (TYP)
PROP FULL DEPTH CONSTRUCTION (TYP)
8" STAMPED COLORED CEMENT CONCRETE
8" GRAVEL BORROW TYPE b
8" STAMPED COLORED CEMENT CONCRETE
8" GRAVEL BORROW TYPE b

MAIN STREET (ROUTE 28)
FULL DEPTH RECONSTRUCTION
STA. 103+75 TO STA. 104+27
NOT TO SCALE



EXISTING STATE HIGHWAY LAYOUT 60' WIDE
EXISTING PAVEMENT VARIES 31'-37'
CONSTRUCTION ℄
GRASS VARIES(2.00'-5.50')
SHLD 2.00'
GORE LINES VARY (0.00'-9.00')
SHLD 2.00'
1' LEVEL
6.00' SIDEWALK
11.00' TRAVEL LANE
TRAVEL LANE VARIES(11.00'-14.00')
6.50' SIDEWALK
1' LEVEL
4" LOAM AND SEED 4:1 MAX SLOPE
MEET EXISTING
SAWCUT
PGL & CROWN LINE
SAWCUT
1.50%*
2.00%
2.00%
1.50%*
MEET EXISTING
4" LOAM AND SEED 4:1 MAX SLOPE
8" GRAVEL BORROW TYPE b
1.0" SUPERPAVE SURFACE COURSE 9.5 (SSC-9.5) OVER 1.5" SUPERPAVE INTERMEDIATE COURSE 19.0 (SIC-19.0)
1.0" SUPERPAVE SURFACE COURSE 9.5 (SSC-9.5) OVER 1.5" SUPERPAVE INTERMEDIATE COURSE 19.0 (SIC-19.0)
8" GRAVEL BORROW TYPE b
4" LOAM AND SEED
1.75" SUPERPAVE SURFACE COURSE 12.5 (SSC-12.5)
2.25" SUPERPAVE INTERMEDIATE COURSE 19.0 (SIC-19.0)
6" HES CEMENT CONCRETE BASE
12" GRAVEL BORROW TYPE b
PROP VERTICAL GRANITE CURB TYPE VB, 6" REVEAL (TYP)
FULL DEPTH CONSTRUCTION

MAIN STREET (ROUTE 28)
MILL AND OVERLAY
102+25 TO STA. 103+40
NOT TO SCALE

CHATHAM
MAIN STREET (ROUTE 28) FROM
GEORGE RYDER ROAD TO BARN HILL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	8	109
PROJECT FILE NO.	606596		

TYPICAL SECTIONS

606596_HD(TYPICAL SECTION).DWG Plotted on 2-Apr-2018 1:08 PM

PAVEMENT NOTES:
MAIN STREET (ROUTE 28), GEORGE RYDER ROAD, & BARN HILL ROAD.

PAVEMENT MILL AND OVERLAY:

SURFACE COURSE:	1.75" SUPERPAVE SURFACE COURSE 12.5 (SSC-12.5) OVER ASPHALT EMULSION FOR TACK COAT (RS-1h)
PAVEMENT MILLING:	1.75" PAVEMENT MICROMILLING

STRUCTURAL OVERLAY:

SURFACE COURSE:	1.75" SUPERPAVE SURFACE COURSE 12.5 (SSC-12.5) OVER ASPHALT EMULSION FOR TACK COAT (RS-1b)
INTERMEDIATE COURSE:	2.25" SUPERPAVE INTERMEDIATE COURSE 19.0 (SIC-19.0) OVER ASPHALT EMULSION FOR TACK COAT (RS-1b)
PAVEMENT MILLING:	2" MICROMILLING

IF REQUIRED LEVELING COURSE WITH 1.75" MIN TO 2.25" SUPERPAVE INTERMEDIATE COURSE 19.0 (SIC-19.0) SHALL BE PAVED UNDER THE HMA OVERLAY AND STRUCTURAL OVERLAY TO MEET GRADING PLAN AND THE CROSS SECTIONS AS REQUIRED.

A 5' WIDE SECTION OF STRUCTURAL OVERLAY IS PROPOSED AT STA 102+50 TO STA 103+00 LT (SEE CROSS SECTIONS FOR MORE DETAIL).

STRUCTURAL OVERLAY IS PROPOSED ON THE LEFT SIDE FROM STA 109+00 TO STA 109+50, AND THE FULL WIDTH OF THE ROADWAY FROM STA 109+50 TO STA 111+00 (SEE CROSS SECTIONS FOR MORE DETAIL).

A 20' WIDE SECTION OF STRUCTURAL OVERLAY IS PROPOSED FROM STA 111+00 TO STA 111+50 (SEE CROSS SECTIONS FOR MORE DETAIL).

FULL DEPTH RECONSTRUCTION:

SURFACE COURSE:	1.75" SUPERPAVE SURFACE COURSE 12.5 (SSC-12.5) OVER ASPHALT EMULSION FOR TACK COAT (RS-1b)
INTERMEDIATE COURSE:	2.25" SUPERPAVE INTERMEDIATE COURSE 19.0 (SIC-19.0) OVER ASPHALT EMULSION FOR TACK COAT (RS-1b)
BASE COURSE:	4" SUPERPAVE BASE COURSE 37.5 (SBC-37.5) OVER
SUB-BASE:	4" DENSE GRADED CRUSHED STONE OVER
	8" GRAVEL BORROW TYPE b

FULL DEPTH CONSTRUCTION LESS THAN 4' WIDE:

SURFACE COURSE:	1.75" SUPERPAVE SURFACE COURSE 12.5 (SSC-12.5) OVER ASPHALT EMULSION FOR TACK COAT (RS-1b)
INTERMEDIATE COURSE:	2.25" SUPERPAVE INTERMEDIATE COURSE 19.0 (SIC-19.0) OVER ASPHALT EMULSION FOR TACK COAT (RS-1b)
BASE COURSE:	6" HES CEMENT CONCRETE BASE OVER
SUB-BASE:	12" GRAVEL BORROW TYPE b

HOT MIX ASPHALT DRIVEWAYS:

SURFACE COURSE:	1.5" SUPERPAVE SURFACE COURSE 12.5 (SSC-9.5) OVER ASPHALT EMULSION FOR TACK COAT (RS-1b)
INTERMEDIATE COURSE:	2" SUPERPAVE INTERMEDIATE COURSE 19.0 (SIC-19.0) OVER
SUB-BASE:	8" GRAVEL BORROW TYPE b

CEMENT CONCRETE TRUCK APRON (WITH TIE BARS AND LOAD TRANSFER DEVICES):

SURFACE COURSE:	8" STAMPED, COLORED CEMENT CONCRETE (REFER TO DETAIL ON SHEET 73)
SUB-BASE:	8" GRAVEL BORROW TYPE b

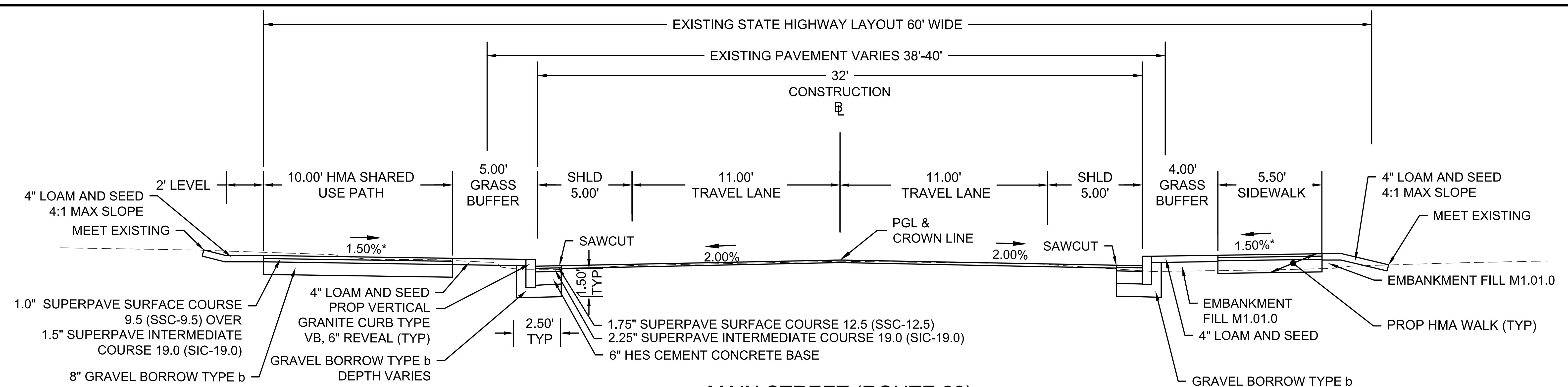
CONTINUED ON SHEET 9

CHATHAM
MAIN STREET (ROUTE 28) FROM
GEORGE RYDER ROAD TO BARN HILL ROAD

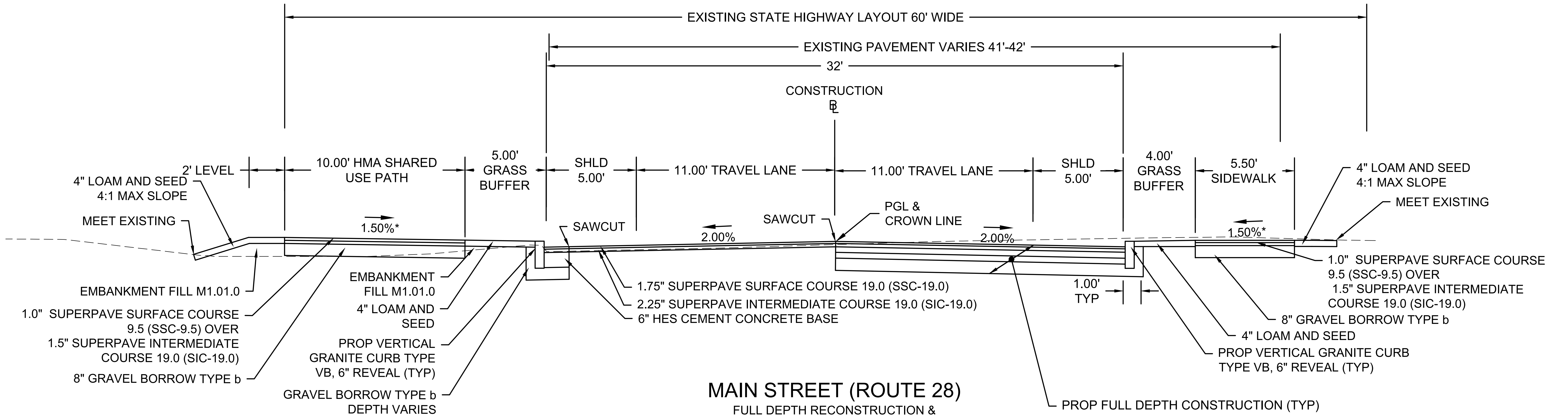
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	9	109
	PROJECT FILE NO.	606596	

TYPICAL SECTIONS

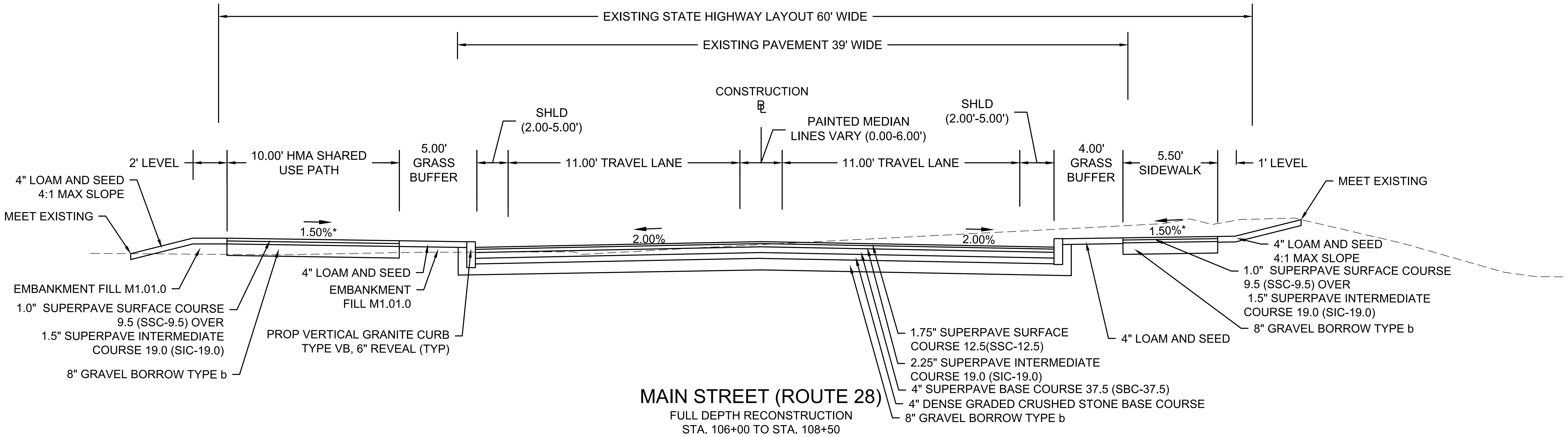
606596_HD(TYPICAL SECTION).DWG   Plotted on 30-Mar-2018 1:47 PM


EXISTING STATE HIGHWAY LAYOUT 60' WIDE
EXISTING PAVEMENT VARIES 38'-40'
32'
CONSTRUCTION
℄
2' LEVEL
10.00' HMA SHARED USE PATH
5.00' GRASS BUFFER
SHLD 5.00'
11.00' TRAVEL LANE
11.00' TRAVEL LANE
SHLD 5.00'
4.00' GRASS BUFFER
5.50' SIDEWALK
4" LOAM AND SEED 4:1 MAX SLOPE
MEET EXISTING
1.50%*
SAWCUT
2.00%
PGL & CROWN LINE
2.00%
SAWCUT
1.50%*
4" LOAM AND SEED 4:1 MAX SLOPE
MEET EXISTING
EMBANKMENT FILL M1.01.0
PROP HMA WALK (TYP)
1.50' TYP
1.0" SUPERPAVE SURFACE COURSE 9.5 (SSC-9.5) OVER 1.5" SUPERPAVE INTERMEDIATE COURSE 19.0 (SIC-19.0)
8" GRAVEL BORROW TYPE b
4" LOAM AND SEED
PROP VERTICAL GRANITE CURB TYPE VB, 6" REVEAL (TYP)
GRAVEL BORROW TYPE b DEPTH VARIES
2.50' TYP
1.75" SUPERPAVE SURFACE COURSE 12.5 (SSC-12.5)
2.25" SUPERPAVE INTERMEDIATE COURSE 19.0 (SIC-19.0)
6" HES CEMENT CONCRETE BASE
EMBANKMENT FILL M1.01.0
4" LOAM AND SEED
GRAVEL BORROW TYPE b DEPTH VARIES

MAIN STREET (ROUTE 28)
MILL AND OVERLAY
STA. 109+50 TO STA. 112+50
NOT TO SCALE


EXISTING STATE HIGHWAY LAYOUT 60' WIDE
EXISTING PAVEMENT VARIES 41'-42'
32'
CONSTRUCTION
℄
2' LEVEL
10.00' HMA SHARED USE PATH
5.00' GRASS BUFFER
SHLD 5.00'
11.00' TRAVEL LANE
11.00' TRAVEL LANE
SHLD 5.00'
4.00' GRASS BUFFER
5.50' SIDEWALK
4" LOAM AND SEED 4:1 MAX SLOPE
MEET EXISTING
1.50%*
SAWCUT
2.00%
SAWCUT
PGL & CROWN LINE
2.00%
1.50%*
4" LOAM AND SEED 4:1 MAX SLOPE
MEET EXISTING
EMBANKMENT FILL M1.01.0
1.0" SUPERPAVE SURFACE COURSE 9.5 (SSC-9.5) OVER 1.5" SUPERPAVE INTERMEDIATE COURSE 19.0 (SIC-19.0)
8" GRAVEL BORROW TYPE b
EMBANKMENT FILL M1.01.0
4" LOAM AND SEED
PROP VERTICAL GRANITE CURB TYPE VB, 6" REVEAL (TYP)
GRAVEL BORROW TYPE b DEPTH VARIES
1.75" SUPERPAVE SURFACE COURSE 19.0 (SSC-19.0)
2.25" SUPERPAVE INTERMEDIATE COURSE 19.0 (SIC-19.0)
6" HES CEMENT CONCRETE BASE
1.00' TYP
PROP FULL DEPTH CONSTRUCTION (TYP)
1.0" SUPERPAVE SURFACE COURSE 9.5 (SSC-9.5) OVER 1.5" SUPERPAVE INTERMEDIATE COURSE 19.0 (SIC-19.0)
8" GRAVEL BORROW TYPE b
4" LOAM AND SEED
PROP VERTICAL GRANITE CURB TYPE VB, 6" REVEAL (TYP)

MAIN STREET (ROUTE 28)
FULL DEPTH RECONSTRUCTION & STRUCTURAL OVERLAY
STA. 108+50 TO STA. 109+50
NOT TO SCALE


EXISTING STATE HIGHWAY LAYOUT 60' WIDE
EXISTING PAVEMENT 39' WIDE
CONSTRUCTION
℄
SHLD (2.00-5.00')
PAINTED MEDIAN LINES VARY (0.00-6.00')
SHLD (2.00'-5.00')
2' LEVEL
10.00' HMA SHARED USE PATH
5.00' GRASS BUFFER
11.00' TRAVEL LANE
11.00' TRAVEL LANE
4.00' GRASS BUFFER
5.50' SIDEWALK
1' LEVEL
4" LOAM AND SEED 4:1 MAX SLOPE
MEET EXISTING
1.50%*
2.00%
2.00%
1.50%*
MEET EXISTING
4" LOAM AND SEED 4:1 MAX SLOPE
EMBANKMENT FILL M1.01.0
1.0" SUPERPAVE SURFACE COURSE 9.5 (SSC-9.5) OVER 1.5" SUPERPAVE INTERMEDIATE COURSE 19.0 (SIC-19.0)
8" GRAVEL BORROW TYPE b
4" LOAM AND SEED
EMBANKMENT FILL M1.01.0
PROP VERTICAL GRANITE CURB TYPE VB, 6" REVEAL (TYP)
1.75" SUPERPAVE SURFACE COURSE 12.5(SSC-12.5)
2.25" SUPERPAVE INTERMEDIATE COURSE 19.0 (SIC-19.0)
4" SUPERPAVE BASE COURSE 37.5 (SBC-37.5)
4" DENSE GRADED CRUSHED STONE BASE COURSE
8" GRAVEL BORROW TYPE b
4" LOAM AND SEED
1.0" SUPERPAVE SURFACE COURSE 9.5 (SSC-9.5) OVER 1.5" SUPERPAVE INTERMEDIATE COURSE 19.0 (SIC-19.0)
8" GRAVEL BORROW TYPE b

MAIN STREET (ROUTE 28)
FULL DEPTH RECONSTRUCTION
STA. 106+00 TO STA. 108+50
NOT TO SCALE

PAVEMENT NOTES:
MAIN STREET (ROUTE 28), GEORGE RYDER ROAD, & BARN HILL ROAD.

CONTINUED ON PAGE 8

CEMENT CONCRETE RAMPS:

SURFACE COURSE:	4" CEMENT CONCRETE SURFACE COURSE OVER
SUB-BASE:	8" GRAVEL BORROW TYPE b

HOT MIX ASPHALT SHARED USE PATH:

SURFACE COURSE:	1.0" SUPERPAVE SURFACE COURSE 12.5 (SSC-12.5) OVER ASPHALT EMULSION FOR TACK COAT (RS-1h)
INTERMEDIATE COURSE:	1.5" SUPERPAVE INTERMEDIATE COURSE 19.0 (SIC-19.0) OVER
SUB-BASE:	8" GRAVEL BORROW TYPE b

HOT MIX ASPHALT WALK SURFACE:

SURFACE COURSE:	1.0" SUPERPAVE SURFACE COURSE 12.5 (SSC-12.5) OVER ASPHALT EMULSION FOR TACK COAT (RS-1h)
INTERMEDIATE COURSE:	1.5" SUPERPAVE INTERMEDIATE COURSE 19.0 (SIC-19.0) OVER
SUB-BASE:	8" GRAVEL BORROW TYPE b

NOTES:

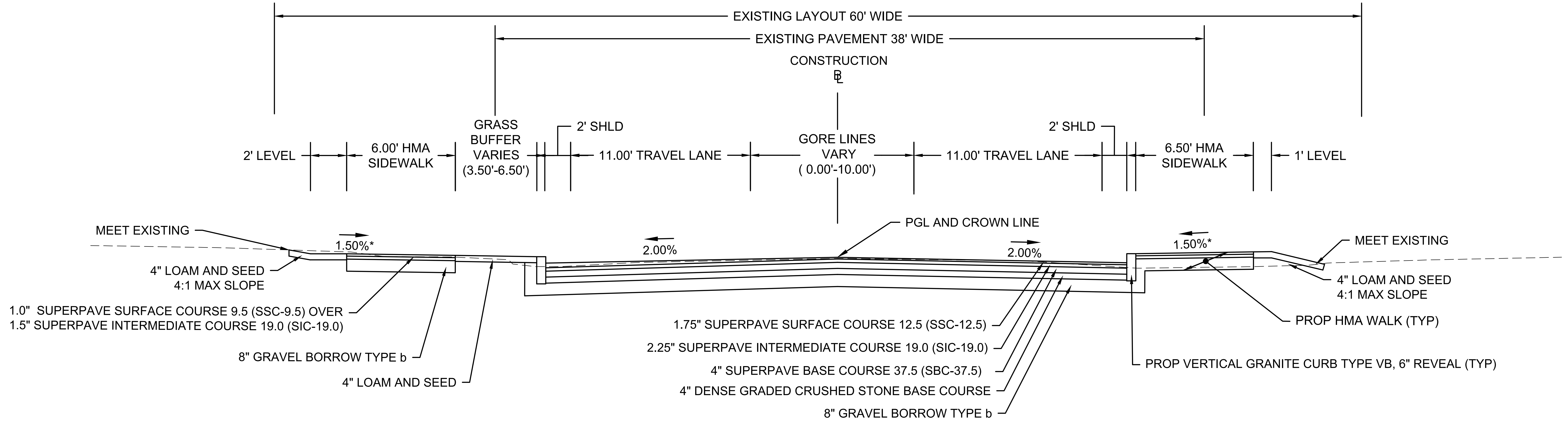
1. ALL HMA PAVEMENT SHALL BE IN ACCORDANCE WITH SECTION 450 QA OF HMA AND 455 SUPERPAVE HMA SPECIFICATIONS.
2. HMA FOR PATCHING, ASPHALT EMULSION FOR TACK COAT (RS-1h), AND HMA JOINT SEALANT SHALL BE PER SECTION 450.
3. ALL SUPERPAVE MIXTURES SHALL BE PRODUCED WITH A WARM MIX ASPHALT TECHNOLOGY.
4. THE SUPERPAVE SURFACE COURSE SHALL BE PAVED CONTINUOUS AS THE FINAL WEARING COURSE FOR RIDE QUALITY AND IMPROVED PERFORMANCE.

* = TOLERANCE FOR CONSTRUCTION ± 0.5% ON SIDEWALK SLOPES, DRIVEWAY SLOPES, AND WHEELCHAIR RAMPS.

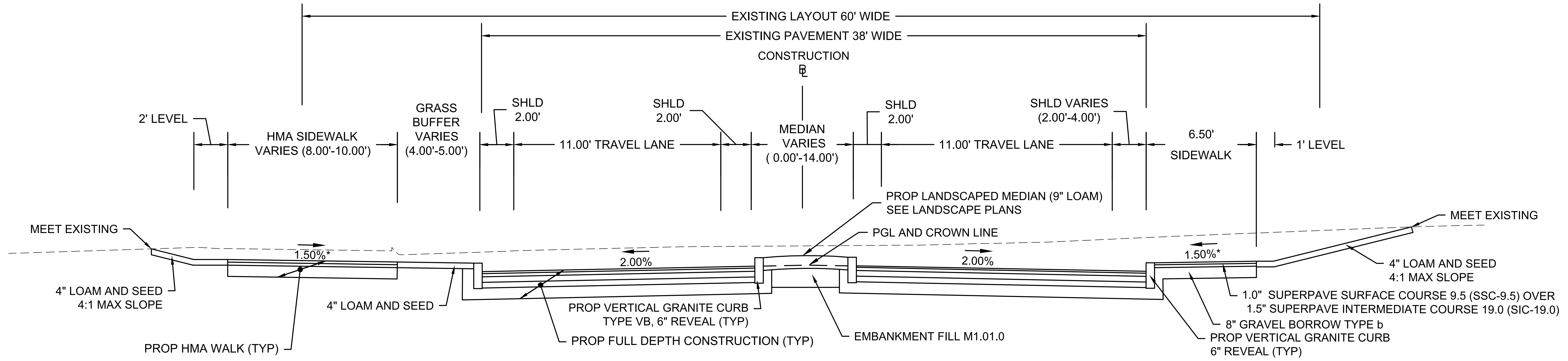
CHATHAM
MAIN STREET (ROUTE 28) FROM
GEORGE RYDER ROAD TO BARN HILL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	10	109
	PROJECT FILE NO.	606596	

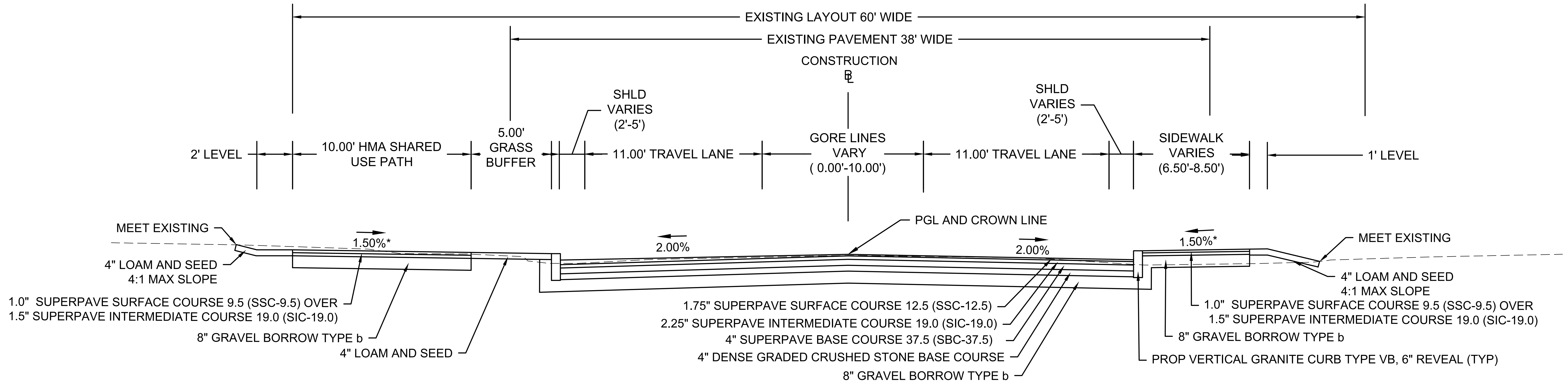
TYPICAL SECTIONS


EXISTING LAYOUT 60' WIDE
EXISTING PAVEMENT 38' WIDE
CONSTRUCTION
℄
2' LEVEL
6.00' HMA SIDEWALK
GRASS BUFFER VARIES (3.50'-6.50')
2' SHLD
11.00' TRAVEL LANE
GORE LINES VARY (0.00'-10.00')
11.00' TRAVEL LANE
2' SHLD
6.50' HMA SIDEWALK
1' LEVEL
MEET EXISTING
1.50%*
2.00%
PGL AND CROWN LINE
2.00%
1.50%*
MEET EXISTING
4" LOAM AND SEED
4:1 MAX SLOPE
1.0" SUPERPAVE SURFACE COURSE 9.5 (SSC-9.5) OVER
1.5" SUPERPAVE INTERMEDIATE COURSE 19.0 (SIC-19.0)
8" GRAVEL BORROW TYPE b
4" LOAM AND SEED
1.75" SUPERPAVE SURFACE COURSE 12.5 (SSC-12.5)
2.25" SUPERPAVE INTERMEDIATE COURSE 19.0 (SIC-19.0)
4" SUPERPAVE BASE COURSE 37.5 (SBC-37.5)
4" DENSE GRADED CRUSHED STONE BASE COURSE
8" GRAVEL BORROW TYPE b
4" LOAM AND SEED
4:1 MAX SLOPE
PROP HMA WALK (TYP)
PROP VERTICAL GRANITE CURB TYPE VB, 6" REVEAL (TYP)

MAIN STREET (ROUTE 28)
FULL DEPTH RECONSTRUCTION
STA. 117+00 TO STA. 119+30
NOT TO SCALE



MAIN STREET (ROUTE 28)
FULL DEPTH RECONSTRUCTION
STA. 114+13 TO STA. 114+98
STA 116+00 TO STA 116+55
NOT TO SCALE


EXISTING LAYOUT 60' WIDE
EXISTING PAVEMENT 38' WIDE
CONSTRUCTION
℄
2' LEVEL
10.00' HMA SHARED USE PATH
5.00' GRASS BUFFER
SHLD VARIES (2'-5')
11.00' TRAVEL LANE
GORE LINES VARY (0.00'-10.00')
11.00' TRAVEL LANE
SHLD VARIES (2'-5')
SIDEWALK VARIES (6.50'-8.50')
1' LEVEL
MEET EXISTING
1.50%*
2.00%
PGL AND CROWN LINE
2.00%
1.50%*
MEET EXISTING
4" LOAM AND SEED
4:1 MAX SLOPE
1.0" SUPERPAVE SURFACE COURSE 9.5 (SSC-9.5) OVER
1.5" SUPERPAVE INTERMEDIATE COURSE 19.0 (SIC-19.0)
8" GRAVEL BORROW TYPE b
4" LOAM AND SEED
1.75" SUPERPAVE SURFACE COURSE 12.5 (SSC-12.5)
2.25" SUPERPAVE INTERMEDIATE COURSE 19.0 (SIC-19.0)
4" SUPERPAVE BASE COURSE 37.5 (SBC-37.5)
4" DENSE GRADED CRUSHED STONE BASE COURSE
8" GRAVEL BORROW TYPE b
4" LOAM AND SEED
4:1 MAX SLOPE
1.0" SUPERPAVE SURFACE COURSE 9.5 (SSC-9.5) OVER
1.5" SUPERPAVE INTERMEDIATE COURSE 19.0 (SIC-19.0)
8" GRAVEL BORROW TYPE b
PROP VERTICAL GRANITE CURB TYPE VB, 6" REVEAL (TYP)

MAIN STREET (ROUTE 28)
FULL DEPTH RECONSTRUCTION
STA. 113+00 TO STA. 114+13
NOT TO SCALE

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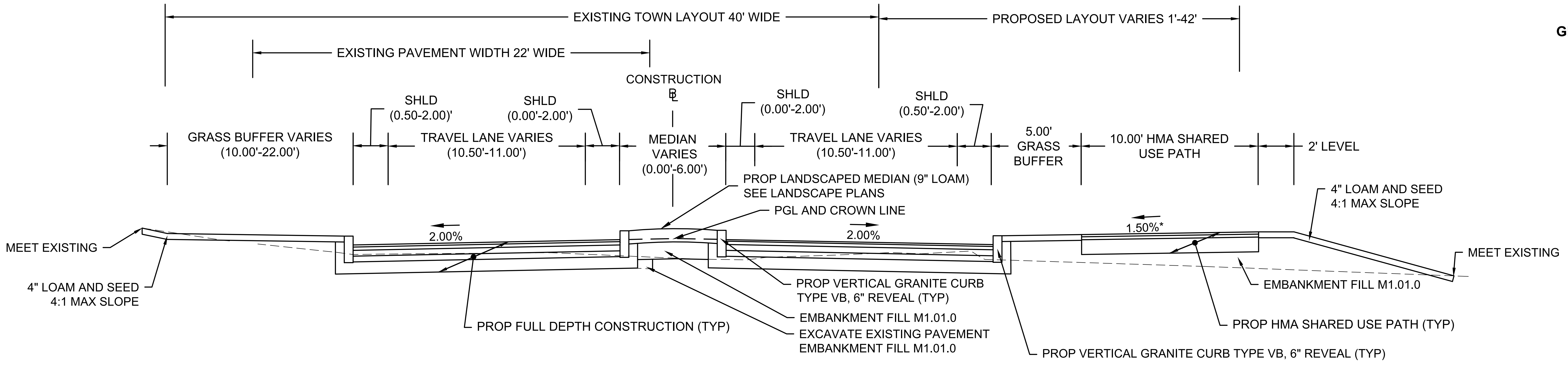
CHATHAM
MAIN STREET (ROUTE 28) FROM
GEORGE RYDER ROAD TO BARN HILL ROAD

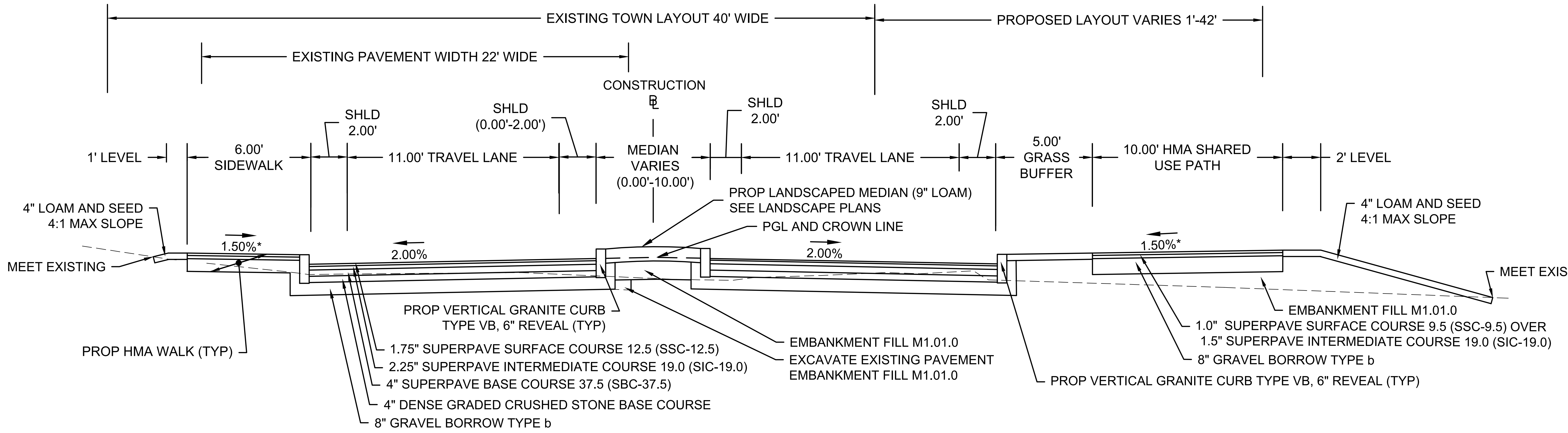
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	11	109
	PROJECT FILE NO.	606596	

TYPICAL SECTIONS


EXISTING TOWN LAYOUT 40' WIDE
PROPOSED LAYOUT VARIES 1'-42'
EXISTING PAVEMENT WIDTH 22' WIDE
CONSTRUCTION ℄
GRASS BUFFER VARIES (10.00'-22.00')
SHLD (0.50-2.00)'
TRAVEL LANE VARIES (10.50'-11.00')
SHLD (0.00'-2.00')
MEDIAN VARIES (0.00'-6.00')
SHLD (0.00'-2.00')
TRAVEL LANE VARIES (10.50'-11.00')
SHLD (0.50'-2.00')
5.00' GRASS BUFFER
10.00' HMA SHARED USE PATH
2' LEVEL
PROP LANDSCAPED MEDIAN (9" LOAM) SEE LANDSCAPE PLANS
PGL AND CROWN LINE
4" LOAM AND SEED 4:1 MAX SLOPE
2.00%
2.00%
1.50%*
MEET EXISTING
MEET EXISTING
4" LOAM AND SEED 4:1 MAX SLOPE
PROP VERTICAL GRANITE CURB TYPE VB, 6" REVEAL (TYP)
EMBANKMENT FILL M1.01.0
EMBANKMENT FILL M1.01.0
EXCAVATE EXISTING PAVEMENT EMBANKMENT FILL M1.01.0
PROP FULL DEPTH CONSTRUCTION (TYP)
PROP HMA SHARED USE PATH (TYP)
PROP VERTICAL GRANITE CURB TYPE VB, 6" REVEAL (TYP)

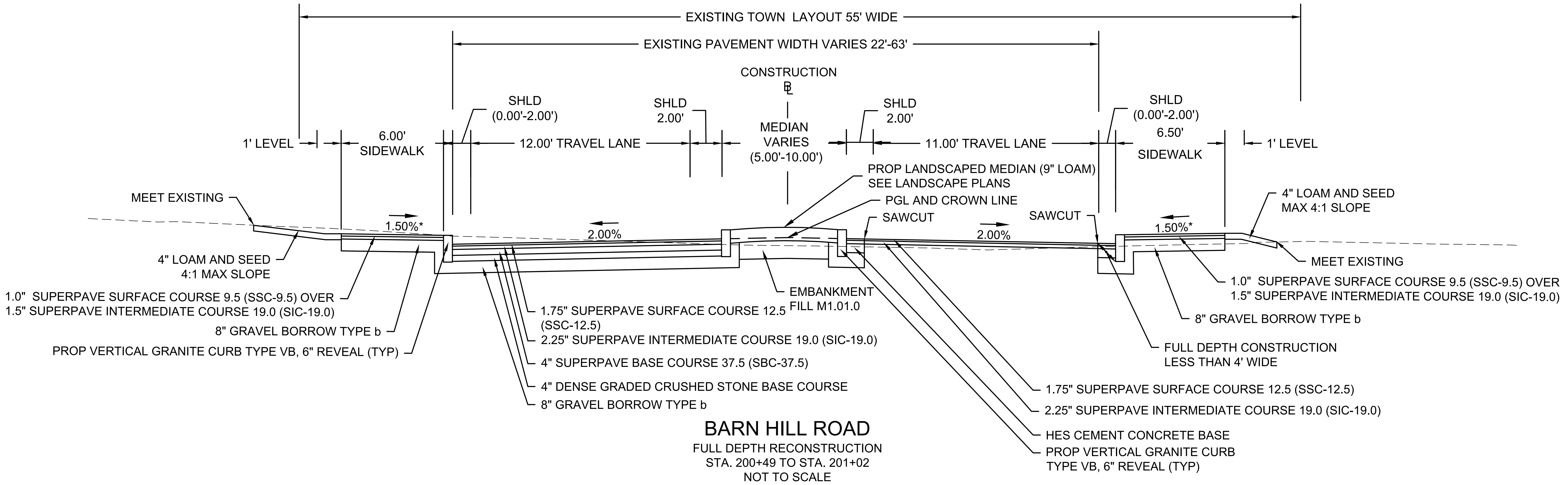
GEORGE RYDER ROAD

FULL DEPTH RECONSTRUCTION
STA. 300+93 TO STA. 302+00
NOT TO SCALE


EXISTING TOWN LAYOUT 40' WIDE
PROPOSED LAYOUT VARIES 1'-42'
EXISTING PAVEMENT WIDTH 22' WIDE
CONSTRUCTION ℄
1' LEVEL
6.00' SIDEWALK
SHLD 2.00'
11.00' TRAVEL LANE
SHLD (0.00'-2.00')
MEDIAN VARIES (0.00'-10.00')
SHLD 2.00'
11.00' TRAVEL LANE
SHLD 2.00'
5.00' GRASS BUFFER
10.00' HMA SHARED USE PATH
2' LEVEL
4" LOAM AND SEED 4:1 MAX SLOPE
PROP LANDSCAPED MEDIAN (9" LOAM) SEE LANDSCAPE PLANS
PGL AND CROWN LINE
4" LOAM AND SEED 4:1 MAX SLOPE
1.50%*
2.00%
2.00%
1.50%*
MEET EXISTING
MEET EXISTING
EMBANKMENT FILL M1.01.0
PROP VERTICAL GRANITE CURB TYPE VB, 6" REVEAL (TYP)
1.0" SUPERPAVE SURFACE COURSE 9.5 (SSC-9.5) OVER 1.5" SUPERPAVE INTERMEDIATE COURSE 19.0 (SIC-19.0)
1.75" SUPERPAVE SURFACE COURSE 12.5 (SSC-12.5)
EMBANKMENT FILL M1.01.0
EXCAVATE EXISTING PAVEMENT EMBANKMENT FILL M1.01.0
8" GRAVEL BORROW TYPE b
PROP HMA WALK (TYP)
2.25" SUPERPAVE INTERMEDIATE COURSE 19.0 (SIC-19.0)
4" SUPERPAVE BASE COURSE 37.5 (SBC-37.5)
PROP VERTICAL GRANITE CURB TYPE VB, 6" REVEAL (TYP)
4" DENSE GRADED CRUSHED STONE BASE COURSE
8" GRAVEL BORROW TYPE b

GEORGE RYDER ROAD

FULL DEPTH RECONSTRUCTION
STA. 300+50 TO STA. 300+93
NOT TO SCALE


EXISTING TOWN LAYOUT 55' WIDE
EXISTING PAVEMENT WIDTH VARIES 22'-63'
CONSTRUCTION ℄
1' LEVEL
6.00' SIDEWALK
SHLD (0.00'-2.00')
12.00' TRAVEL LANE
SHLD 2.00'
MEDIAN VARIES (5.00'-10.00')
SHLD 2.00'
11.00' TRAVEL LANE
SHLD (0.00'-2.00')
6.50' SIDEWALK
1' LEVEL
PROP LANDSCAPED MEDIAN (9" LOAM) SEE LANDSCAPE PLANS
PGL AND CROWN LINE
SAWCUT
SAWCUT
4" LOAM AND SEED MAX 4:1 SLOPE
MEET EXISTING
1.50%*
2.00%
2.00%
1.50%*
MEET EXISTING
4" LOAM AND SEED 4:1 MAX SLOPE
1.0" SUPERPAVE SURFACE COURSE 9.5 (SSC-9.5) OVER 1.5" SUPERPAVE INTERMEDIATE COURSE 19.0 (SIC-19.0)
8" GRAVEL BORROW TYPE b
PROP VERTICAL GRANITE CURB TYPE VB, 6" REVEAL (TYP)
EMBANKMENT FILL M1.01.0
1.75" SUPERPAVE SURFACE COURSE 12.5 (SSC-12.5)
2.25" SUPERPAVE INTERMEDIATE COURSE 19.0 (SIC-19.0)
4" SUPERPAVE BASE COURSE 37.5 (SBC-37.5)
4" DENSE GRADED CRUSHED STONE BASE COURSE
8" GRAVEL BORROW TYPE b
1.0" SUPERPAVE SURFACE COURSE 9.5 (SSC-9.5) OVER 1.5" SUPERPAVE INTERMEDIATE COURSE 19.0 (SIC-19.0)
8" GRAVEL BORROW TYPE b
FULL DEPTH CONSTRUCTION LESS THAN 4' WIDE
1.75" SUPERPAVE SURFACE COURSE 12.5 (SSC-12.5)
2.25" SUPERPAVE INTERMEDIATE COURSE 19.0 (SIC-19.0)
HES CEMENT CONCRETE BASE
PROP VERTICAL GRANITE CURB TYPE VB, 6" REVEAL (TYP)

BARN HILL ROAD

FULL DEPTH RECONSTRUCTION
STA. 200+49 TO STA. 201+02
NOT TO SCALE

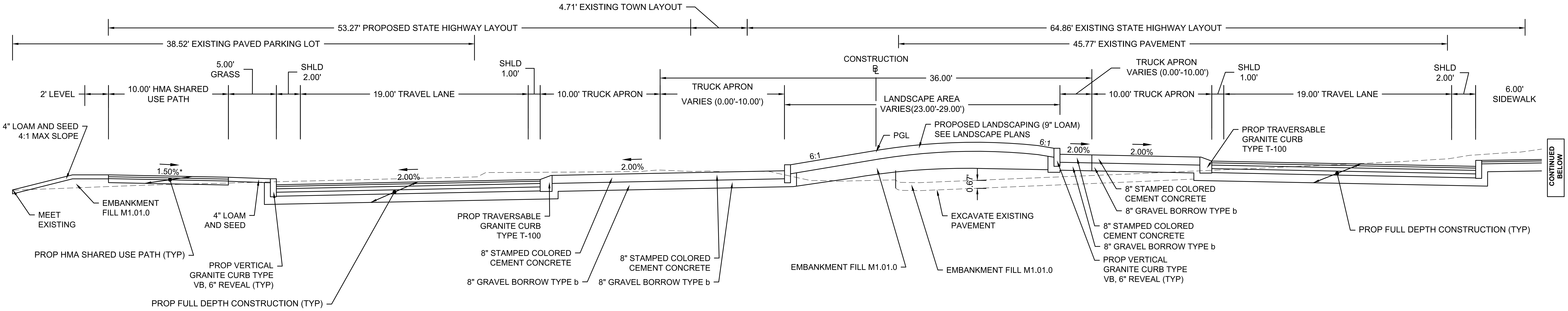
606596_HD(TYPICAL SECTION).DWG   Plotted on 30-Mar-2018 1:47 PM

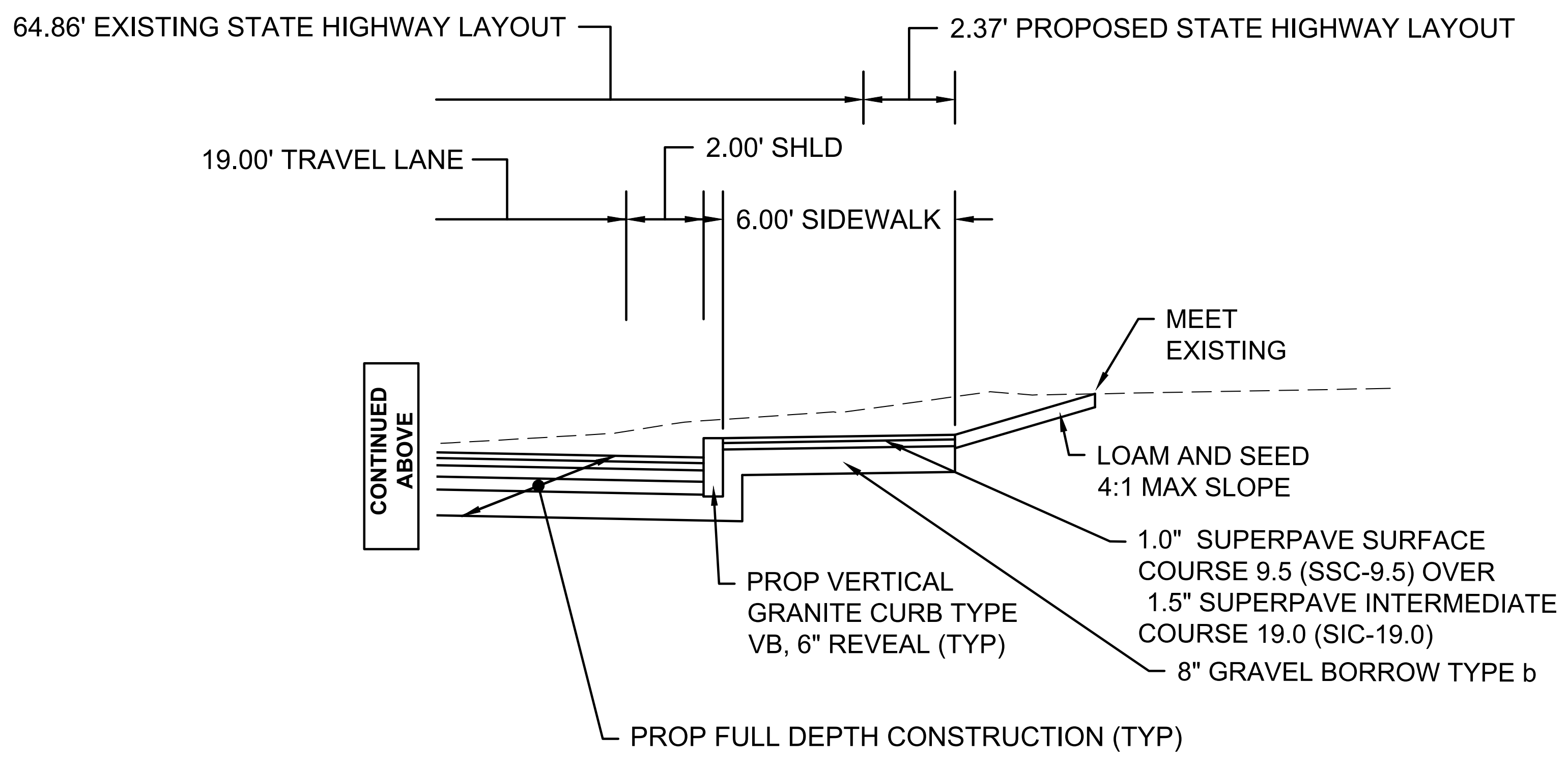
CHATHAM
MAIN STREET (ROUTE 28) FROM
GEORGE RYDER ROAD TO BARN HILL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	12	109
	PROJECT FILE NO.	606596	

TYPICAL SECTIONS

606596_HD(TYPICAL SECTION).DWG Plotted on 30-Mar-2018 1:48 PM


4.71' EXISTING TOWN LAYOUT
53.27' PROPOSED STATE HIGHWAY LAYOUT
64.86' EXISTING STATE HIGHWAY LAYOUT
38.52' EXISTING PAVED PARKING LOT
45.77' EXISTING PAVEMENT
CONSTRUCTION ℄
36.00'
5.00' GRASS
SHLD 2.00'
SHLD 1.00'
TRUCK APRON VARIES (0.00'-10.00')
TRUCK APRON VARIES (0.00'-10.00')
SHLD 1.00'
SHLD 2.00'
2' LEVEL
10.00' HMA SHARED USE PATH
19.00' TRAVEL LANE
10.00' TRUCK APRON
LANDSCAPE AREA VARIES(23.00'-29.00')
10.00' TRUCK APRON
19.00' TRAVEL LANE
6.00' SIDEWALK
4" LOAM AND SEED 4:1 MAX SLOPE
PGL
PROPOSED LANDSCAPING (9" LOAM) SEE LANDSCAPE PLANS
PROP TRAVERSABLE GRANITE CURB TYPE T-100
1.50%*
2.00%
2.00%
6:1
6:1
2.00%
2.00%
0.67'
CONTINUED BELOW
MEET EXISTING
EMBANKMENT FILL M1.01.0
4" LOAM AND SEED
PROP HMA SHARED USE PATH (TYP)
PROP VERTICAL GRANITE CURB TYPE VB, 6" REVEAL (TYP)
PROP FULL DEPTH CONSTRUCTION (TYP)
PROP TRAVERSABLE GRANITE CURB TYPE T-100
8" STAMPED COLORED CEMENT CONCRETE
8" GRAVEL BORROW TYPE b
8" STAMPED COLORED CEMENT CONCRETE
8" GRAVEL BORROW TYPE b
EMBANKMENT FILL M1.01.0
EXCAVATE EXISTING PAVEMENT
EMBANKMENT FILL M1.01.0
8" STAMPED COLORED CEMENT CONCRETE
8" GRAVEL BORROW TYPE b
8" STAMPED COLORED CEMENT CONCRETE
8" GRAVEL BORROW TYPE b
PROP VERTICAL GRANITE CURB TYPE VB, 6" REVEAL (TYP)
PROP FULL DEPTH CONSTRUCTION (TYP)


64.86' EXISTING STATE HIGHWAY LAYOUT
2.37' PROPOSED STATE HIGHWAY LAYOUT
19.00' TRAVEL LANE
2.00' SHLD
6.00' SIDEWALK
MEET EXISTING
CONTINUED ABOVE
LOAM AND SEED 4:1 MAX SLOPE
1.0" SUPERPAVE SURFACE COURSE 9.5 (SSC-9.5) OVER 1.5" SUPERPAVE INTERMEDIATE COURSE 19.0 (SIC-19.0)
PROP VERTICAL GRANITE CURB TYPE VB, 6" REVEAL (TYP)
8" GRAVEL BORROW TYPE b
PROP FULL DEPTH CONSTRUCTION (TYP)

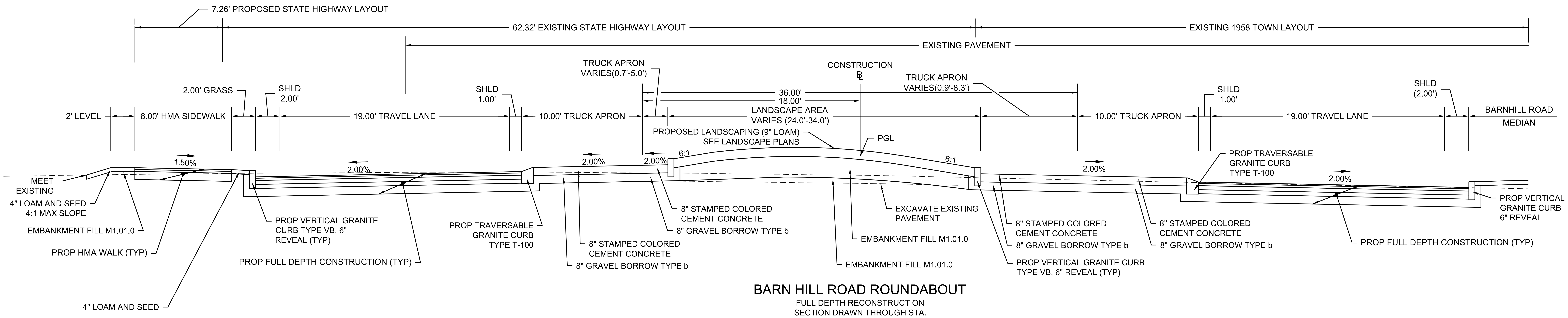
GEORGE RYDER ROAD ROUNDABOUT
FULL DEPTH RECONSTRUCTION
SECTION DRAWN THROUGH
STA. 500+60 AND STA. 501+48
NOT TO SCALE

CHATHAM
MAIN STREET (ROUTE 28) FROM
GEORGE RYDER ROAD TO BARN HILL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	13	109
	PROJECT FILE NO.	606596	

TYPICAL SECTIONS

606596_HD(TYPICAL SECTION).DWG Plotted on 30-Mar-2018 1:48 PM



BARN HILL ROAD ROUNDABOUT
FULL DEPTH RECONSTRUCTION
SECTION DRAWN THROUGH STA.
400+05 AND STA. 400+93
NOT TO SCALE

CHATHAM
MAIN STREET (ROUTE 28) FROM GEORGE RYDER ROAD TO BARN HILL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	14	109
PROJECT FILE NO.	606596		

CONSTRUCTION BASELINE TIES

606596_HD(CONST BL TIE).DWG Plotted on 30-Mar-2018 1:49 PM

GEORGE RYDER ROAD CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L8	300+00.00	2713136.745	1067121.644		N2°28'02"E 32.57'	300+32.57	2713169.282	1067123.046
C10	300+32.57	2713169.282	1067123.046	R=250.00' Δ=10°46'17" L=47.00' T=23.57'		300+79.57	2713216.151	1067120.657
L9	300+79.57	2713216.151	1067120.657		N8°18'15"W 95.33'	301+74.90	2713310.483	1067106.888
C11	301+74.90	2713310.483	1067106.888	R=750.00' Δ=8°18'15" L=108.70' T=54.45'		302+83.60	2713418.804	1067099.024
L10	302+83.60	2713418.804	1067099.024		N0°00'00"E 58.00'	303+41.60	2713476.809	1067099.024
L28	303+41.60	2713476.809	1067099.024		N0°15'36"E 180.25'	305+21.86	2713657.061	1067099.843

GEORGE RYDER ROAD STA 300+28.00 =
GEORGE RYDER ROUNDABOUT STA 500+34.41
N 2713164.719
E 1067122.849

MAIN STREET STA 104+77.54=
GEORGE RYDER ROAD STA 300+00
N 2713136.681
E 1067121.721

MAIN STREET STA 105+05.70 =
GEORGE RYDER ROUNDABOUT STA 500+98.81
N 2713117.030
E 1067141.526

MAIN STREET STA 104+49.48 =
GEORGE RYDER ROUNDABOUT STA 500+05.50
N 2713152.112
E 1067098.237

MAIN STREET STA 103+69.71=
GEORGE RYDER ROAD SOUTH STA 600+00
N 2713181.392
E 1067024.360

MHD SURVEY 3
N: 2713551.795
E: 1066619.252
ELEV 39.452
POINT NAME: MPKN

MHD SURVEY 4
N: 2713359.635
E: 1066857.703
ELEV 40.814
POINT NAME: MPKN

MHD SURVEY 5
N: 2713212.019
E: 1067021.810
ELEV 40.758
POINT NAME: MPKN

MHD SURVEY 13
N: 2713576.263
E: 1067112.982
ELEV 43.816
POINT NAME: MPKN

MHD SURVEY 16
N: 2713159.704
E: 1067145.376
ELEV 39.540
POINT NAME: MPKN

MHD SURVEY 14
N: 2713043.374
E: 1066859.634
ELEV 40.411
POINT NAME: MPKN

MHD SURVEY 6
N: 2713042.335
E: 1067422.562
ELEV 44.258
POINT NAME: MPKN

MHD SURVEY 7
N: 2713011.274
E: 1067801.805
ELEV 50.915
POINT NAME: MFLY

LIMIT OF WORK
STA 304+91.00
N 2713626.204
E 1067099.702

LIMIT OF WORK
STA 100+76.61
N 2713372.902
E 1066802.783

LIMIT OF WORK
STA 601+38.55
N 2713080.360
E 1066929.985

MAIN STREET PUBLIC - 60' WIDE
GEORGE RYDER ROAD PUBLIC - 40' WIDE
GEORGE RYDER ROAD SOUTH PRIVATE - 33' WIDE
SEAQUANSET ROAD PUBLIC - 35' WIDE
SURVEY TRAVERSE
1970 TOWN LAYOUT
1960 TOWN LAYOUT
1927 STATE HIGHWAY LAYOUT (NO. 2414)
EXISTING RECORD BASELINE
PROPOSED CONSTRUCTION BASELINE
N 2713382.490
E 1067003.063
E 1067503.063
N 2712882.490
PI +41.60
PT +83.60
PC +74.90
PT +79.57
PC +32.57
PI +70.393
PC +22.66
PCC 104+08.31
PRC +24.48
600+00
PC +39.45
601+38.55
500+00
501+75.92
501+97.87
PT +40.38
PCC +11.80
PT +44.03
+42.61
+87.35
+00.17
S54°48'34"E 345.33'
S51°08'09"E 306.24'
S7°06'00"W 50.12'
N74°40'18"W 23.52'
N1°03'10"E 375.48'
N15°45'56"E 54.09'
S86°26'23"W 37.56'
N77°31'23"W 54.05'
S48°01'42"E 220.73
N32°21'17"W 114.11'
N75°18'51"E 67.85'
S67°03'06"E 435.19'
N59°36'57"W 95.56'
N37°39'49"E 93.12'
S43°52'47"W 233.97'
S57°57'37"W 53.29'
S33°44'26"W 223.72'
S74°16'26"E 31.03'
N53°28'08"E 89.38'
S21°36'23"W 26.42'
S85°19'04"E 380.51'
S87°01'17"E 364.56'
S26°57'17"E 22.36'
S39°36'44"W 75.65'
119 MMHB
L21
L22
L23
C22
C23
C24
C25
C26
C14
L8
L9
L10
L28
C10
C11
N/F ENSIGN 53, LLC MAP 8E, LOT 41-15C BK.15658, PG.112
N/F COMMONWEALTH OF MASSACHUSETTS MAP 83, LOT M1 BK.1488, PG.1018
N/F DAVID E. & MARGARET E. ARCHIBALD MAP 8E, LOT 40-15B BK.2975, PG.186
N/F RONALD C. MESERVEY MAP 8E, LOT 37-15 BK.2631, PG.28
N/F ROBERT A. & MARCIA BENSON MAP 8E, LOT 2-5 BK.25007, PG.294
N/F DANIEL K. & SHARON F. MESERVEY MAP 8E, LOT 39-16 BK.10738, PG.86
N/F NEW CREEK II LLC MAP 8E, LOT 52-27A BK.25979, PG.95
N/F JOHN & JUDITH MILLER TRUST MAP 8E, LOT 1L-C74 CERT. No.191988
N/F THE SUMNER G. N. HARDING TRUST OF 1997 THE JEAN C. HARDING TRUST OF 1997 MAP 8E, LOT 53-27 BK.11030, PG.34
N/F JKM PROPERTY FOUR LLC MAP 8E, LOT 1K-C73 LCC# 28422-I, CERT# 208888
N/F BROADMEADOW REALTY TRUST MAP 8E, LOT 1F-C75 CERT. No.175553
N/F JKM PROPERTY THREE LLC MAP 8E, LOT 1J-C72 LCC# 28422-I, CERT# 208889
N/F THE SUMNER G. N. HARDING TRUST OF 1997 THE JEAN C. HARDING TRUST OF 1997 MAP 9E, LOT 1-11 BK.11030, PG.34
N/F THE SUMNER G.N. HARDING TRUST OF 1997 MAP 8E, LOT 1-H3 BK.11030, PG.33
N/F TOWN OF CHATHAM MAP 9E, LOT 2-10 BK.15361, PG.181
N/F CHATHAM PROFESSIONAL BUILDING CONDOMINIUM MAP 8E, LOT 1G-X3 CERT. No.C323
N/F JKM PROPERTY FOUR LLC MAP 8E, LOT 1H-C71 LCC# 28422-I, CERT# 208887
N/F JKM PROPERTY THREE, LLC MAP 8D, LOT 53A-6A BK. 29489, PG. 67
N/F RICHARD W. & BERNADINE A. STEPHENSON MAP 8E, LOT 1A-C64 CERT. No.134191
N/F B & D REALTY NOMINEE TRUST MAP 8D, LOT 53-6 BK.19847, PG.273
N/F FM NOMINEE REALTY TRUST MAP 8D, LOT 48-R42B BK.11513, PG.285
N/F LOWER CAPE VENTURES, LLC MAP 8D, LOT 1-8 BK.19749, PG.3
N/F SEAQUANSET REALTY TRUST MAP 8D, LOT 51-R45 BK.12199, PG.73
N/F BOTSOLIS FAMILY REALTY TRUST MAP 9D, LOT 45-14B BK.22936, PG.8
N/F BARN HILL PROPERTIES, INC MAP 9D, LOT 44-12A BK.20908, PG.180
N/F CLAIRE SIEKMAN MAP 8D, LOT 78-C69 CERT. No.181618
N/F MIHRAN & ALICE ARTINIAN MAP 8D, LOT 53B-6B BK.22586, PG.152
N/F FM NOMINEE REALTY TRUST MAP 8D, LOT 48A-R42 BK.11513, PG.285
N
0 40 100 160
SCALE: 1" = 40'

CONTINUED ON SHEET NO. 15

GEORGE RYDER ROUNDABOUT CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
C14	500+00.00	2713147.250	1067095.689	R=28.00' Δ=359°58'46" L=175.92' T=0.01'		501+75.92	2713147.241	1067095.686

CHATHAM
MAIN STREET (ROUTE 28) FROM GEORGE RYDER ROAD TO BARN HILL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	15	109
PROJECT FILE NO. 606596			

CONSTRUCTION BASELINE TIES

BARN HILL ROAD CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L11	200+00.00	2712949.278	1068155.539		S13°53'22"E 47.42'	200+47.42	2712903.247	1068166.921
C12	200+47.42	2712903.247	1068166.921	R=100.00' Δ=7°51'49" L=13.72' T=6.87'		200+61.14	2712890.191	1068171.118
L12	200+61.14	2712890.191	1068171.118		S21°45'11"E 110.00'	201+71.14	2712788.026	1068211.884
C13	201+71.14	2712788.026	1068211.884	R=500.00' Δ=4°21'29" L=38.03' T=19.03'		202+09.17	2712752.201	1068224.622
L13	202+09.17	2712752.201	1068224.622		S17°23'41"E 62.12'	202+71.29	2712692.925	1068243.192

BARN HILL ROUNDABOUT CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
C15	400+00.00	2712975.301	1068145.204	R=28.00' Δ=359°58'46" L=175.92' T=0.01'		401+75.92	2712975.297	1068145.195

MAIN STREET CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L21	100+00.00	2713423.994	1066745.699		S48°10'14"E 270.37'	102+70.37	2713243.682	1066947.158
L22	102+70.37	2713243.682	1066947.158		S47°35'20"E 52.29'	103+22.66	2713208.414	1066985.766
C22	103+22.66	2713208.414	1066985.766	R=182.00' Δ=16°53'23" L=53.65' T=27.02'		103+76.31	2713178.548	1067030.101
C23	103+76.31	2713178.548	1067030.101	R=300.00' Δ=9°12'03" L=48.18' T=24.14'		104+24.48	2713161.364	1067075.052
C24	104+24.48	2713161.364	1067075.052	R=131.80' Δ=31°54'15" L=73.39' T=37.67'		104+97.87	2713122.681	1067136.307
C25	104+97.87	2713122.681	1067136.307	R=233.00' Δ=28°00'57" L=113.93' T=58.13'		106+11.80	2713059.252	1067229.582
C26	106+11.80	2713059.252	1067229.582	R=909.76' Δ=14°37'31" L=232.23' T=116.75'		108+44.03	2713013.365	1067456.585
L23	108+44.03	2713013.365	1067456.585		S86°22'24"E 454.75'	112+98.78	2712984.601	1067910.420
L24	112+98.78	2712984.601	1067910.420		S85°23'13"E 116.16'	114+14.94	2712975.258	1068026.206
L25	114+14.94	2712975.258	1068026.206		S86°22'24"E 36.38'	114+51.32	2712972.957	1068062.514
C27	114+51.32	2712972.957	1068062.514	R=250.00' Δ=19°58'57" L=87.19' T=44.04'		115+38.51	2712952.532	1068146.825
C28	115+38.51	2712952.532	1068146.825	R=85.25' Δ=34°17'41" L=51.03' T=26.30'		115+89.54	2712946.875	1068196.774
L26	115+89.54	2712946.875	1068196.774		N79°18'52"E 84.52'	116+74.05	2712962.546	1068279.825
C29	116+74.05	2712962.546	1068279.825	R=490.00' Δ=10°41'22" L=91.42' T=45.84'		117+65.47	2712971.043	1068370.714
C30	117+65.47	2712971.043	1068370.714	R=789.58' Δ=9°59'24" L=137.67' T=69.01'		119+03.14	2712984.774	1068507.522
L27	119+03.14	2712984.774	1068507.522		N79°20'55"E 96.15'	119+99.29	2713002.546	1068602.017

606596_HD(CONST BL TIE).DWG Plotted on 30-Mar-2018 1:50 PM

CHATHAM
MAIN STREET (ROUTE 28) FROM GEORGE RYDER ROAD TO BARN HILL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	16	109
PROJECT FILE NO.	606596		

CONSTRUCTION PLANS

606596_HD(CNST-PLAN).DWG Plotted on 30-Mar-2018 1:50 PM

HIGHWAY GUARD DETAILS	TRAFFIC SIGNAL CONDUIT	WATER SUPPLY ALTERATIONS	DRAINAGE DETAILS
NONE	NONE	SEE SHEET 57	SEE SHEET 57

CONTINUED ON SHEET NO. 17

CONTINUED ON SHEET NO. 18

▨	CEMENT CONC PAVEMENT - STAMPED & COLORED

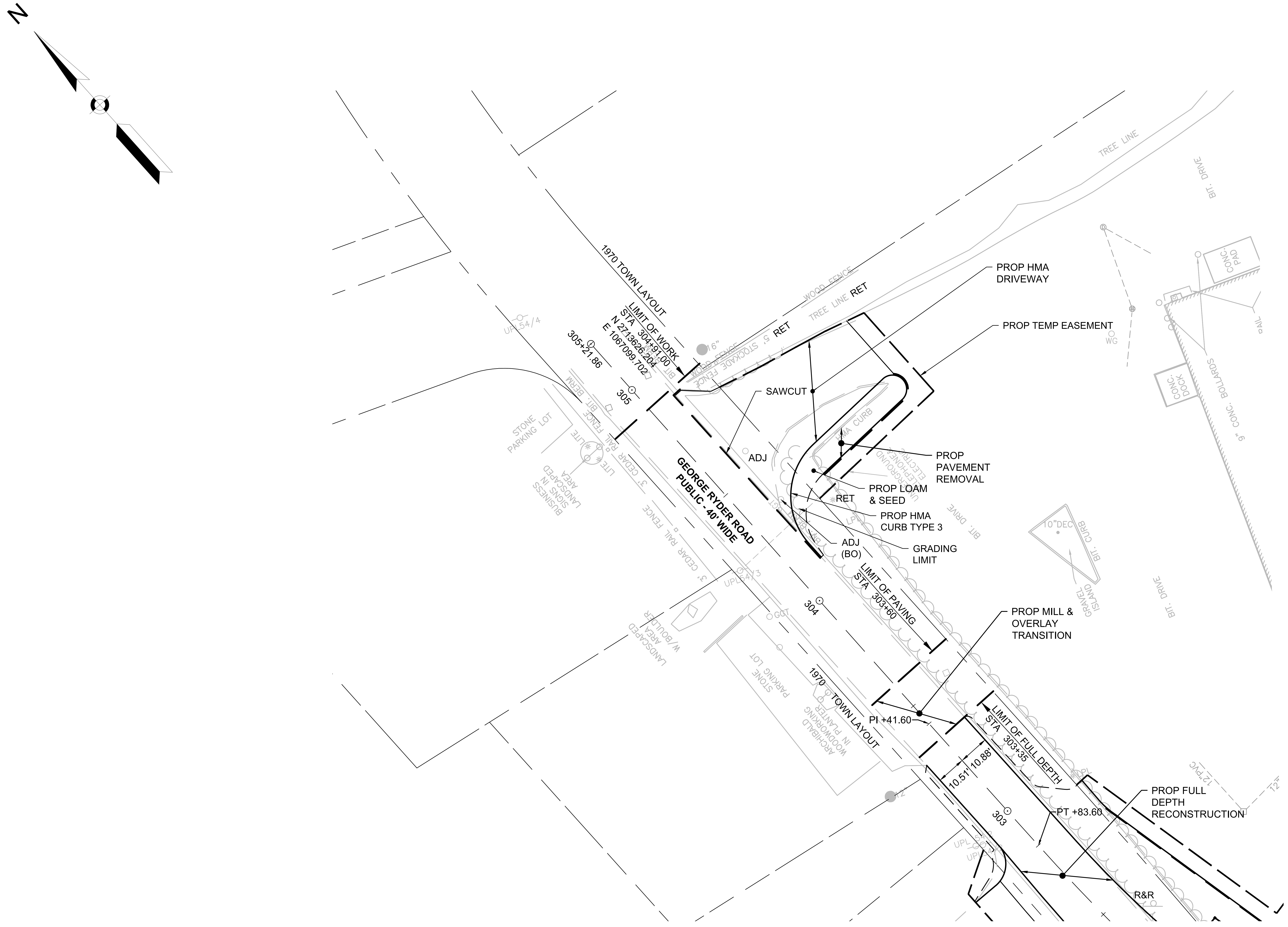
N
PI +41.60
1970 TOWN LAYOUT
10.51'
10.88'
PROP TRANSITION CURB - VGC TO EOP, MEET EXIST
PT +83.60
303
10.73'
11.00
PROP 4" LOAM & SEED
RET
PROP VGC
GEORGE RYDER ROAD PUBLIC - 40' WIDE
11.18'
L=238.61'
R=3426.62'
D=3°59'23"
13.71'
PROP HMA DRIVEWAY
PROP PERM EASEMENT (TYP)
PROP TEMP EASEMENT (TYP)
PROP HMA BERM - TYPE A MODIFIED
R&D LANDSCAPING
PROP HMA CURB TYPE 3
PROP 4" LOAM & SEED (TYP)
PROP HMA DRIVEWAY
REM EXIST ISLAND
REM TREE
R&R
RET
REM
14.46'
302
R&S
PC +74.90
PROP VGC
RET
PROP LANDSCAPED AREA
18.00'
18.00'
PROP VGC
REM
PROP HMA CURB - TYPE 3
SAWCUT
PROP 5' GRASS BUFFER
PROP 10' HMA SHARED USE PATH
PROP L&S
REM
301
18.00'
PT +79.57
REM
RET
STONE WALL
R&D LANDSCAPING
PROP UP (TYP)
PROP VGC (TYP)
PC +32.57
501+75.92
PRC +24.48
500+00
PROP BOUND (TYP)
R&R SIGN & LIGHTING (BO)
PROP VGC
REM
EXIST BD.
R&S
300+00
56.00'
PROP GRAN CURB TYPE T-100
22.63'
PROP LIGHT POLE & HIGHWAY LIGHTING EASEMENT (TYP)
PROP LAYOUT ALTERATION
PROP TEMP EASEMENT (TYP)
PROP LANDSCAPING SEE SHEETS 70-72
PROP LEACHING BASIN (TYP)
PROP 10' HMA SHARED USE PATH
PROP HMA DRIVEWAY
R&R (BO)
PROP HMA DRIVEWAY
R&R (BO)
R&R (BO)
RET
REM
PRC +97.87
PROP LP (TYP)
PCC +11.80
18.00'
PT +40.38
PROP VGC (TYP)
PROP 7.5' HMA SIDEWALK
PROP GRADING LIMIT
1927 STATE HIGHWAY LAYOUT (NO. 2414)
PROP PERM UTIL EASEMENT (TYP)
PROP TEMP EASEMENT (TYP)
PROP LAYOUT ALTERATION
PROP FULL DEPTH RECONSTRUCTION
PROP UP (TYP)
RET SIGN
PROP BOUND (TYP)
GEORGE RYDER ROAD STA 300+28.00 = GEORGE RYDER ROUNDABOUT STA 500+34.41 N 2713164.719 E 1067122.849
MAIN STREET STA 104+77.54= GEORGE RYDER ROAD STA 300+00 N 2713136.681 E 1067121.721
MAIN STREET STA 103+69.71= GEORGE RYDER ROAD SOUTH STA 600+00 N 2713181.392 E 1067024.360
MAIN STREET STA 104+49.48 = GEORGE RYDER ROUNDABOUT STA 500+05.50 N 2713152.112 E 1067098.237
MAIN STREET STA 105+05.70 = GEORGE RYDER ROUNDABOUT STA 500+98.81 N 2713117.030 E 1067141.526
N/F THE SUMNER G. N. HARDING TRUST OF 1997 THE JEAN C. HARDING TRUST OF 1997 MAP 8E, LOT 53-27 BK.11030, PG.34
N/F NEW CREEK II LLC MAP 8E, LOT 52-27A BK.25979, PG.95
N/F DANIEL K. & SHARON F. MESERVEY MAP 8E, LOT 39-16 BK.10738, PG.86
N/F RONALD C. MESERVEY MAP 8E, LOT 37-15 BK.2631, PG.28
N/F JKM PROPERTY FOUR LLC MAP 8E, LOT 1K-C73 LCC# 28422-I, CERT# 208888
N/F JKM PROPERTY THREE LLC MAP 8E, LOT 1J-C72 LCC# 28422-I, CERT# 208889
N/F JKM PROPERTY FOUR LLC MAP 8E, LOT 1H-C71 LCC# 28422-I, CERT#208887
N/F JKM PROPERTY THREE, LLC MAP 8D, LOT 53A-6A BK. 29489, PG. 67
N/F FM NOMINEE REALTY TRUST MAP 8D, LOT 48A-R42 BK.11513, PG.285
N/F FM NOMINEE REALTY TRUST MAP 8D, LOT 48A-R42 BK.11513, PG.285
1927 STATE HIGHWAY LAYOUT (NO. 2414)
R&R (BO)
RET
LIMIT OF WORK STA 100+76.61 N 2713372.902 E 1066802.783
26
BEGIN +00.00
161
101
160
13.71'
PROP VGC (TYP)
REM
REM
PROP 4" LOAM AND SEED
PROP 6' HMA SIDEWALK
PROP GRADING LIMIT
PROP BOX WIDENING
PROP HMA DRIVEWAY
PROP TEMP EASEMENT (TYP)
PROP HMA CURB TYPE 3 MEET EXIST
PROP HMA CURB TYPE 3 MEET EXIST
PROP MILL & OVERLAY
17.82'
RECORD BASELINE
PI +70.37
+22.84 PI
102
159
103
158
PC +22.66
18.00'
SAWCUT
18.00'
MAIN STREET PUBLIC - 60' WIDE
25
17.87'
PROP VGC (TYP)
PROP FULL DEPTH CONSTRUCTION
18.88'
PCC +76.31
1
2
3
4
5
6
7
8
24.35'
104
28.20'
10.00'
26.99'
157
REM
RET
R&S
RET
RET
PROP GRADING LIMIT
PROP 6.0' HMA SIDEWALK
REM EXIST HEDGES; PROP 4" LOAM AND SEED
RET EXIST BD.
LIMIT OF WORK
RET EXIST BD.
PROP TEMP EASEMENT (TYP)
RET PROP TREE PROTECTION (TYP)
1927 STATE HIGHWAY LAYOUT (NO. 2414)
17.97'
PC +39.45
PROP HMA BERM TYPE A - MODIFIED
REM EXIST PAVEMENT; PROP LOAM & SEED AROUND PROP DRAIN STRUCTURE
PROP PERM UTIL EASEMENT (TYP)
PROP LANDSCAPED AREA
601
PROP DRAINAGE EASEMENT
MEET EXISTING
LIMIT OF WORK STA 601+38.55 N 2713080.360 E 1066929.985
PROP TEMP EASEMENT
MEET EXISTING
17.97'
GEORGE RYDER ROAD SOUTH PRIVATE - 33' WIDE
MARKET PLACE
WOODED AREA
1 STORY WOOD #1715
1 STORY WOOD #1705
1 STORY BRICK #1671
LESS GAS STATION 1 STORY WOOD #1698
GAS PUMP OVERHANG
MHD SURVEY 4
MHD SURVEY 5
MHD SURVEY 16
SCALE: 1" = 20'
0
20
50
100

CHATHAM
MAIN STREET (ROUTE 28) FROM
GEORGE RYDER ROAD TO BARN HILL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	17	109
	PROJECT FILE NO.	606596	

CONSTRUCTION PLANS

HIGHWAY GUARD DETAILS	TRAFFIC SIGNAL CONDUIT	WATER SUPPLY ALTERATIONS	DRAINAGE DETAILS
NONE	NONE	NONE	SEE SHEET 57



CONTINUED ON
SHEET NO. 16

0 20 50 100
SCALE: 1" = 20'

606596_HD(CNST-PLAN).DWG Plotted on 30-Mar-2018 1:51 PM

HIGHWAY GUARD DETAILS	TRAFFIC SIGNAL CONDUIT	WATER SUPPLY ALTERATIONS	DRAINAGE DETAILS
NONE	NONE	SEE SHEET 58	SEE SHEET 58

CHATHAM
MAIN STREET (ROUTE 28) FROM GEORGE RYDER ROAD TO BARN HILL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	18	109
	PROJECT FILE NO.	606596	

CONSTRUCTION PLANS

NOTE:

1) STRUCTURAL OVERLAY IS PROPOSED ON THE LEFT SIDE FROM STA 109+00 TO STA 109+50, AND THE FULL WIDTH OF THE ROADWAY FROM STA 109+50 TO STA 111+00 (SEE CROSS SECTIONS FOR MORE DETAIL).
2) A 20' WIDE SECTION OF STRUCTURAL OVERLAY IS PROPOSED FROM STA 111+00 TO STA 111+50 (SEE CROSS SECTIONS FOR MORE DETAIL).

CHATHAM
MAIN STREET (ROUTE 28) FROM
GEORGE RYDER ROAD TO BARN HILL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	19	109
PROJECT FILE NO.	606596		

CONSTRUCTION PLANS

HIGHWAY GUARD DETAILS	TRAFFIC SIGNAL CONDUIT	WATER SUPPLY ALTERATIONS	DRAINAGE DETAILS
NONE	NONE	SEE SHEET 59	SEE SHEET 59

N
N/F TOWN OF CHATHAM MAP 9E, LOT 2-10 BK.15361, PG.181
N/F TOWN OF CHATHAM MAP 9E, LOT 3-9 BK.18912, PG.179
N/F TOWN OF CHATHAM MAP 9E, LOT 3B-9B BK.18912, PG.179
N/F CAPE COD COMMERCIAL HOOK FISHERMAN'S ASSOCIATION, INC. MAP 9E, LOT 5-8 BK.24712, PG.341
N/F CHATHAM HOUSING AUTHORITY MAP 9E, LOT 6-2B BK.25768, PG.73
N/F 1566 MAIN STREET, LLC MAP 9E, LOT 6-7 BK.23319, PG.134
1 STORY WOOD #1550 SI=52.57
WHELDON WAY PRIVATE - 33' WIDE
MHD SURVEY 7 N: 2713011.274 E: 1067801.805 ELEV 50.915 POINT NAME: MFLY
MHD SURVEY 22 N: 2713003.864 E: 1067926.60 ELEV 50.965 POINT NAME: MPKN
MHD SURVEY 9 N: 2713000.294 E: 1068414.630 ELEV 52.310 POINT NAME: MPKN
MHD SURVEY 84 N: 2712987.543 E: 1068298.473 ELEV 51.632 POINT NAME: MTRT MMAG
PROP TEMP EASEMENT (TYP)
R&D EXIST BD.
R&R CEDAR RAIL FENCE TO BACK OF SHARED USE PATH
PROP 5' GRASS STRIP
PROP 10' HMA SHARED USE PATH (TYP)
PROP GRADING LIMIT
PROP MEDIAN PED. REFUGE AREA (TYP)
PROP BD. (TYP)
R&D EXIST BD.
PROP BOUND (TYP)
PROP 8' HMA SIDEWALK
PROP TEMP EASEMENT (TYP)
PROP CONTRACTION JOINT
REM STUMP
MEET EXISTING
PROP HMA DRIVEWAY
REM EXIST PVMT; PROP LOAM & SEED
PROP LOAM & SEED
PROP TEMP EASEMENT (TYP)
MEET EXISTING
PROP 6' HMA SIDEWALK
R&R BRICK WALK
PROP LOAM & SEED
PROP FULL DEPTH CONSTRUCTION
1927 STATE HIGHWAY LAYOUT
SAWCUT
PI +98.78
PROP MILL & OVERLAY
MAIN STREET PUBLIC - 60' WIDE
PROP VGC (TYP)
PI +14.94
PC +51.32
PROP GRAN CURB TYPE T-100
401+75.92
400+00
PRC +38.51
22.00'
PROP LANDSCAPING SEE SHEETS 69-71 SEE NOTE 1
56.00'
200+00
PT +89.54
SEE NOTE 1
PC +74.05
+50.05 PT
RECORD BASELINE
198.48' R=679.60' D=16° 44' 00"
PRC +65.47
18.07'
1927 STATE HIGHWAY LAYOUT (NO. 2414)
PROP LOAM & SEED
PROP HMA CURB TYPE 3
PROP HMA DRIVEWAY
PROP 4' LOAM & SEED
PROP HMA DRIVEWAY
PROP TEMP EASEMENT (TYP)
RET SIGN
PROP ISLAND FOR GUY W/ VGC
PROP VGC AT BOS
PROP VGC W/ 3" REVEAL INSIDE SHOP AHOY PARKING LOT (TYP)
REM EXIST PAVEMENT WITHIN DRIVEWAY APRON
PROP 6.5' HMA SIDEWALK
PROP BOUND (TYP)
R&S
PROP TEMP EASEMENT (TYP)
PROP GRADING LIMIT
PROP LAYOUT ALTERATION
R&R HYDRANT
PROP ISLAND FOR GUY W/ VGC
PROP PERM EASEMENT (TYP)
PROP FULL DEPTH RECONSTRUCTION
PROP HMA DRIVEWAY
PROP VGC
R&S 3' CEDAR RAIL FENCE
RAMP SIDEWALK DOWN TO EXIST GRADE
HMA SIDEWALK SECTION TO TRANSITION TO MATCH EXIST SIDEWALK
REM MEDIAN
PC +47.42
PT +61.14
PROP VGC (TYP)
17.93'
19.23'
17.89'
17.71'
18.11'
18.63'
BARN HILL ROAD PUBLIC - 40' WIDE
PROP PERM EASEMENT
RET BRICK WALK
PROP BOUND (TYP)
R&R (BO)
R&D EXIST BD.
PROP 6.5' HMA SIDEWALK
PROP HMA DRIVEWAY
REM EXIST PVMT; PROP LOAM & SEED
REM (BO)
PROP HMA DRIVEWAY
PROP HMA BERM TYPE A - MODIFIED
PC +71.14
PROP TREE PROTECTION (TYP)
PROP TEMP EASEMENT (TYP)
PROP STRUCTURAL OVERLAY
11.43'
10.74'
20.66'
PT +09.17
MEET EXISTING
RET EXIST BD.
LIMIT OF WORK STA 202+40.67 N 2712719.044 E 1068235.010
1958 TOWN LAYOUT
202+71.29
MHD SURVEY 17 N: 2712731.928 E: 1068218.817 ELEV 48.211 POINT NAME: MPKN
OLLIE'S RESTAURANT 2 STORY WOOD #1603
LARRY'S PX RESTAURANT 1 STORY WOOD #1579-1595
DUNKIN DONUTS 2 STORY WOOD
1 STORY WOOD MOTEL
MASTER MARINER MOTEL
N/F BARN HILL PROPERTIES, INC MAP 9D, LOT 44-12A BK.20908, PG.180
N/F BARN HILL PROPERTIES, INC MAP 9D, LOT 43-12 BK.21678, PG.163
N/F GRS INVESTMENTS, LLC MAP 9D, LOT 6-16 BK.23177, PG.334
N/F GRS INVESTMENTS, LLC MAP 9D, LOT 5-17 BK.23177, PG.334
REM
RET
112
113
114
115
116
117
118
143
145
146
147
148
16.00'
18.00'
19.61'
18.19'
18.51'
18.53'
18.18'
17.95'
5.00'
13
14
15
16
17
18
19
20
21
0 20 50 100
SCALE: 1" = 20'

MAIN STREET STA 115+19.81 =
BARN HILL ROUNDABOUT STA 401+52.86
N 2712959.375
E 1068129.423

MAIN STREET STA 115+75.94=
BARN HILL ROUNDABOUT STA 400+58.43
N 2712945.428
E 1068183.273

MAIN STREET STA 115+47.82 =
BARN HILL ROAD STA 200+00.00
N 2712949.277
E 1068155.539

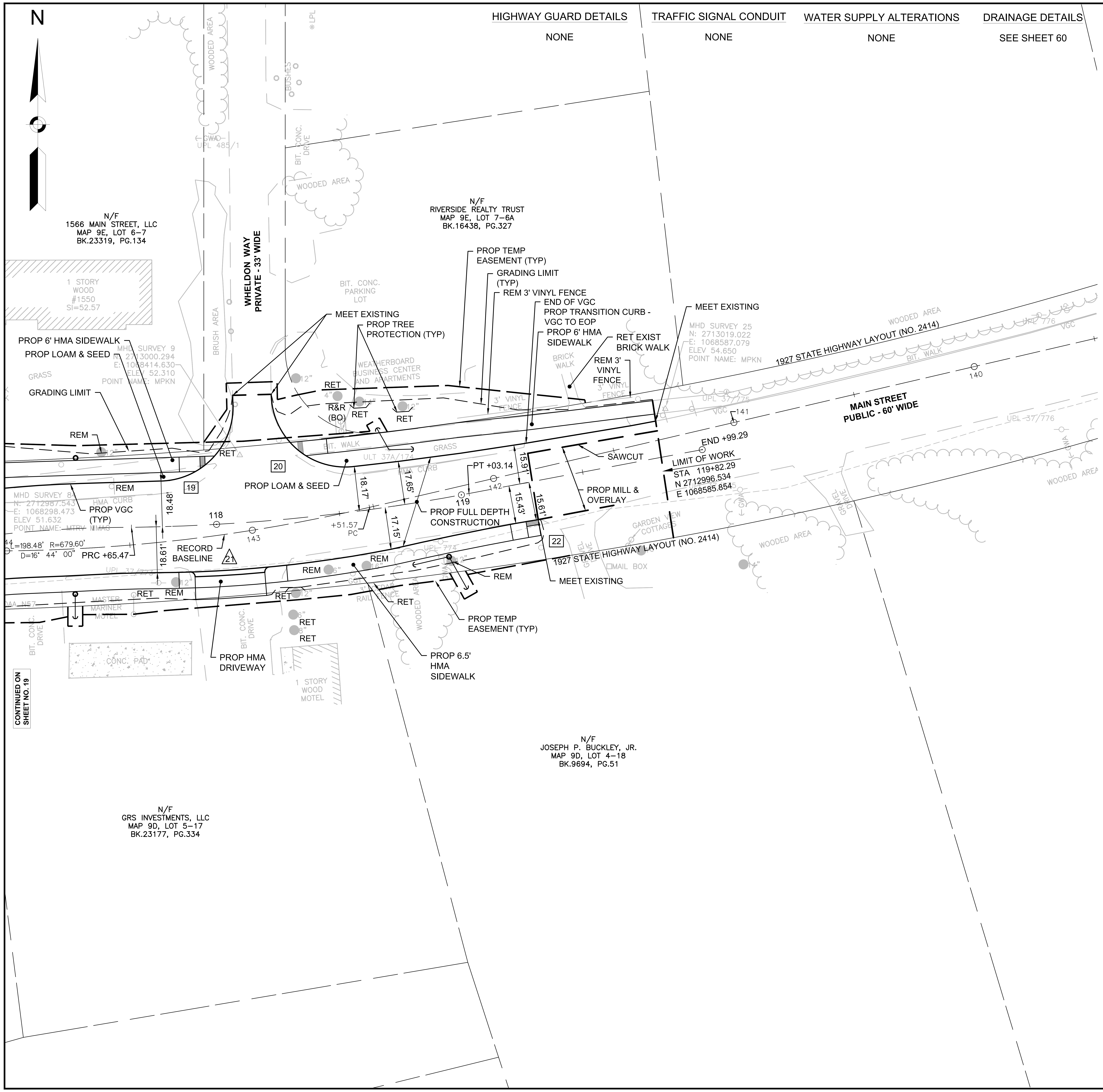
BARN HILL ROAD STA 200+28.00 =
BARN HILL ROUNDABOUT STA 401+91.76
N 2712922.096
E 1068162.260

▦	CEMENT CONC PAVEMENT - STAMPED & COLORED

CONTINUED ON SHEET NO. 18

CONTINUED ON SHEET NO. 20

HIGHWAY GUARD DETAILS	TRAFFIC SIGNAL CONDUIT	WATER SUPPLY ALTERATIONS	DRAINAGE DETAILS
NONE	NONE	NONE	SEE SHEET 60



CONTINUED ON SHEET NO. 19

CHATHAM
MAIN STREET (ROUTE 28) FROM GEORGE RYDER ROAD TO BARN HILL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	20	109
	PROJECT FILE NO.	606596	

CONSTRUCTION PLANS

0 20 50 100
SCALE: 1" = 20'

Plotted on 30-Mar-2018 1:52 PM

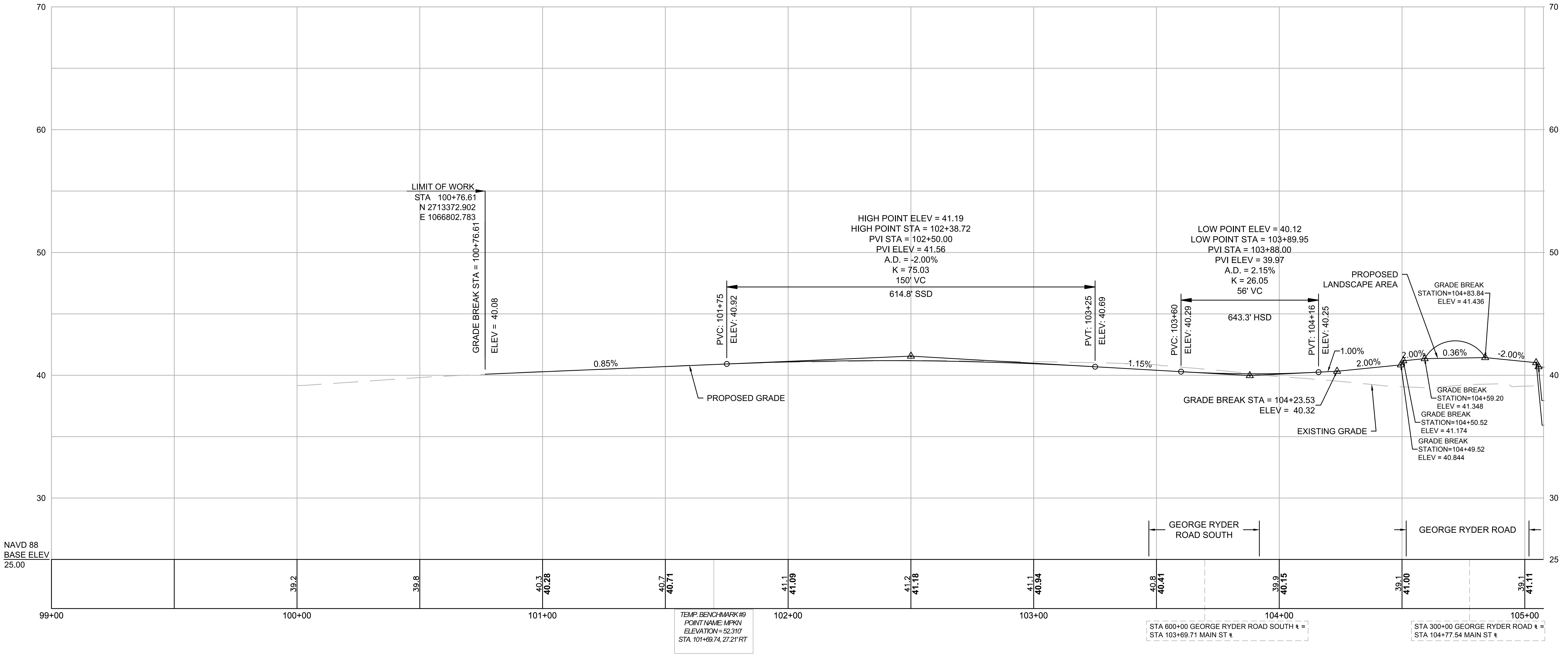
606596_HD(CNST-PLAN).DWG

CHATHAM
MAIN STREET (ROUTE 28) FROM GEORGE RYDER ROAD TO BARN HILL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	21	109
PROJECT FILE NO.	606596		

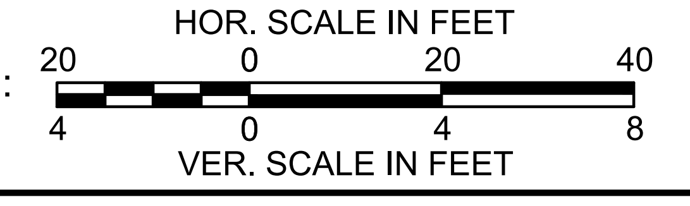
PROFILES

MAIN STREET (ROUTE 28)



CONTINUED ON SHEET NO. 22

FOR CONSTRUCTION PLANS:
SEE SHEET NOS. 16-20

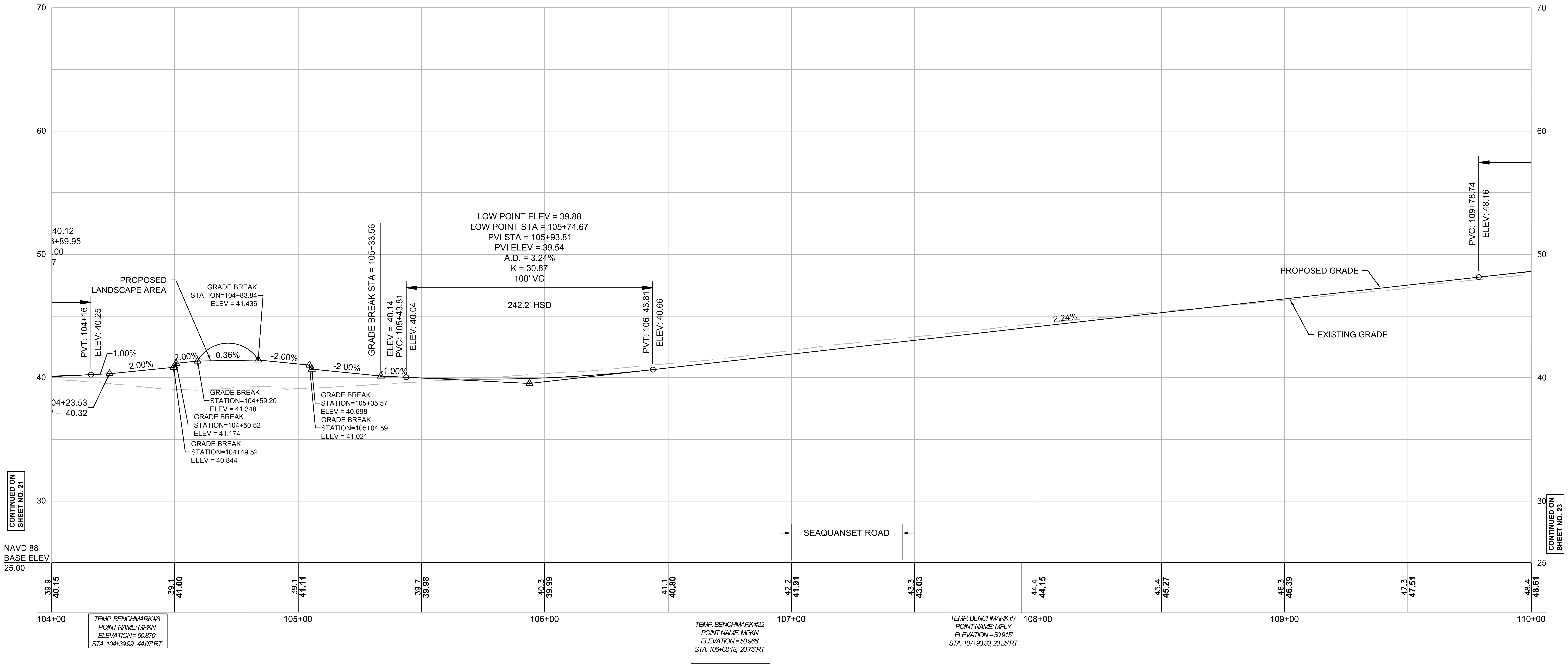


CHATHAM
MAIN STREET (ROUTE 28) FROM
GEORGE RYDER ROAD TO BARN HILL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	22	109
	PROJECT FILE NO.	606596	

PROFILES

MAIN STREET (ROUTE 28)



CONTINUED ON SHEET NO. 21

CONTINUED ON SHEET NO. 23

FOR CONSTRUCTION PLANS:
SEE SHEET NOS. 16-20

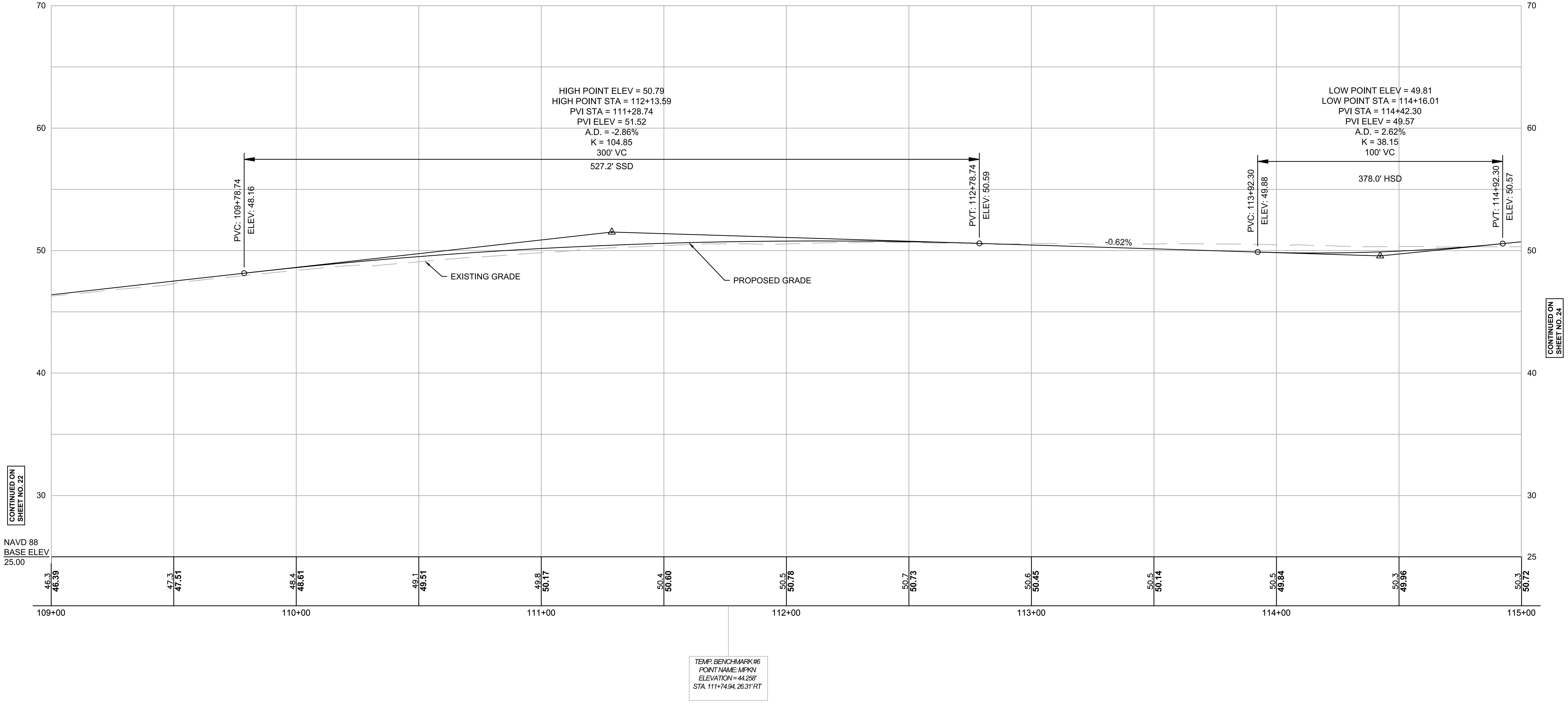
HOR. SCALE IN FEET
20 0 20 40
4 0 4 8
VER. SCALE IN FEET

CHATHAM
MAIN STREET (ROUTE 28) FROM
GEORGE RYDER ROAD TO BARN HILL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	23	109
	PROJECT FILE NO.	606596	

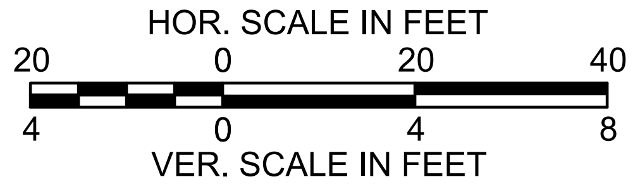
PROFILES

MAIN STREET (ROUTE 28)



TEMP. BENCHMARK #6
POINT NAME: MPKN
ELEVATION = 44.258'
STA. 111+74.94, 26.31' RT

FOR CONSTRUCTION PLANS:
SEE SHEET NOS. 16-20



606596_HD(PROFILE).DWG Plotted on 2-Apr-2018 1:59 PM

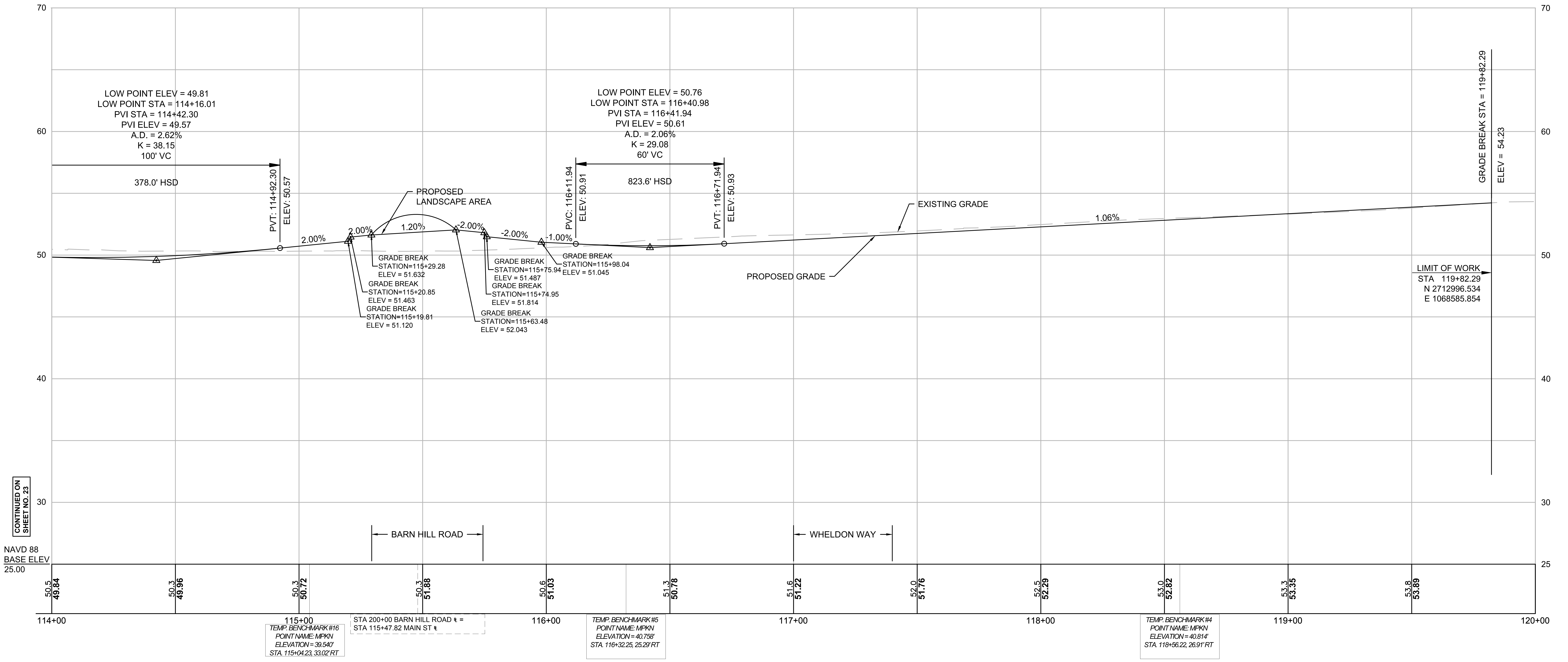
CHATHAM
MAIN STREET (ROUTE 28) FROM
GEORGE RYDER ROAD TO BARN HILL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	24	109
PROJECT FILE NO.	606596		

PROFILES

606596_HD(PROFILE).DWG Plotted on 2-Apr-2018 1:59 PM

MAIN STREET (ROUTE 28)



CONTINUED ON SHEET NO. 23

FOR CONSTRUCTION PLANS:
SEE SHEET NOS. 16-20

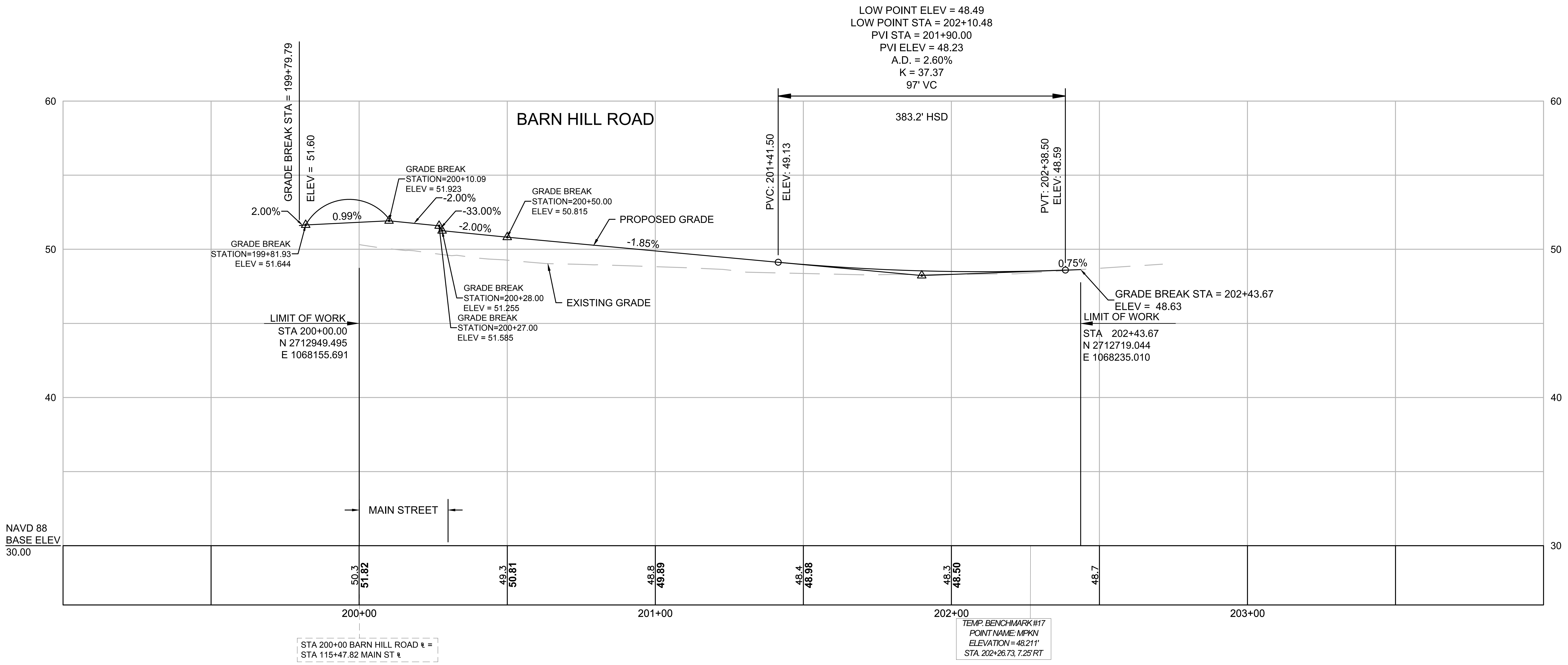
HOR. SCALE IN FEET
20 0 20 40
4 0 4 8
VER. SCALE IN FEET

CHATHAM
MAIN STREET (ROUTE 28) FROM GEORGE RYDER ROAD TO BARN HILL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	25	109
PROJECT FILE NO.	606596		

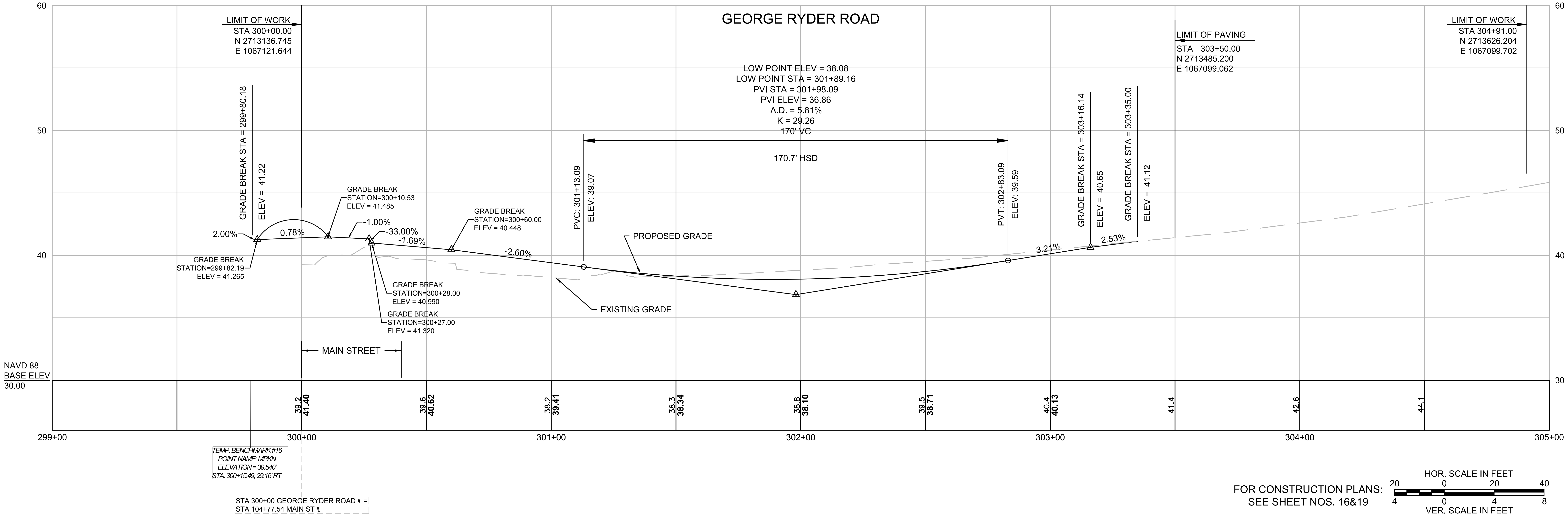
PROFILES

606596_HD(PROFILE).DWG Plotted on 2-Apr-2018 2:00 PM


BARN HILL ROAD

STA 200+00 BARN HILL ROAD ℄ =
STA 115+47.82 MAIN ST ℄

TEMP. BENCHMARK #17
POINT NAME: MPKN
ELEVATION = 48.211'
STA. 202+26.73, 7.25' RT


GEORGE RYDER ROAD

TEMP. BENCHMARK #16
POINT NAME: MPKN
ELEVATION = 39.540'
STA. 300+15.49, 29.16' RT

STA 300+00 GEORGE RYDER ROAD ℄ =
STA 104+77.54 MAIN ST ℄

FOR CONSTRUCTION PLANS:
SEE SHEET NOS. 16&19

HOR. SCALE IN FEET
20 0 20 40
4 0 4 8
VER. SCALE IN FEET

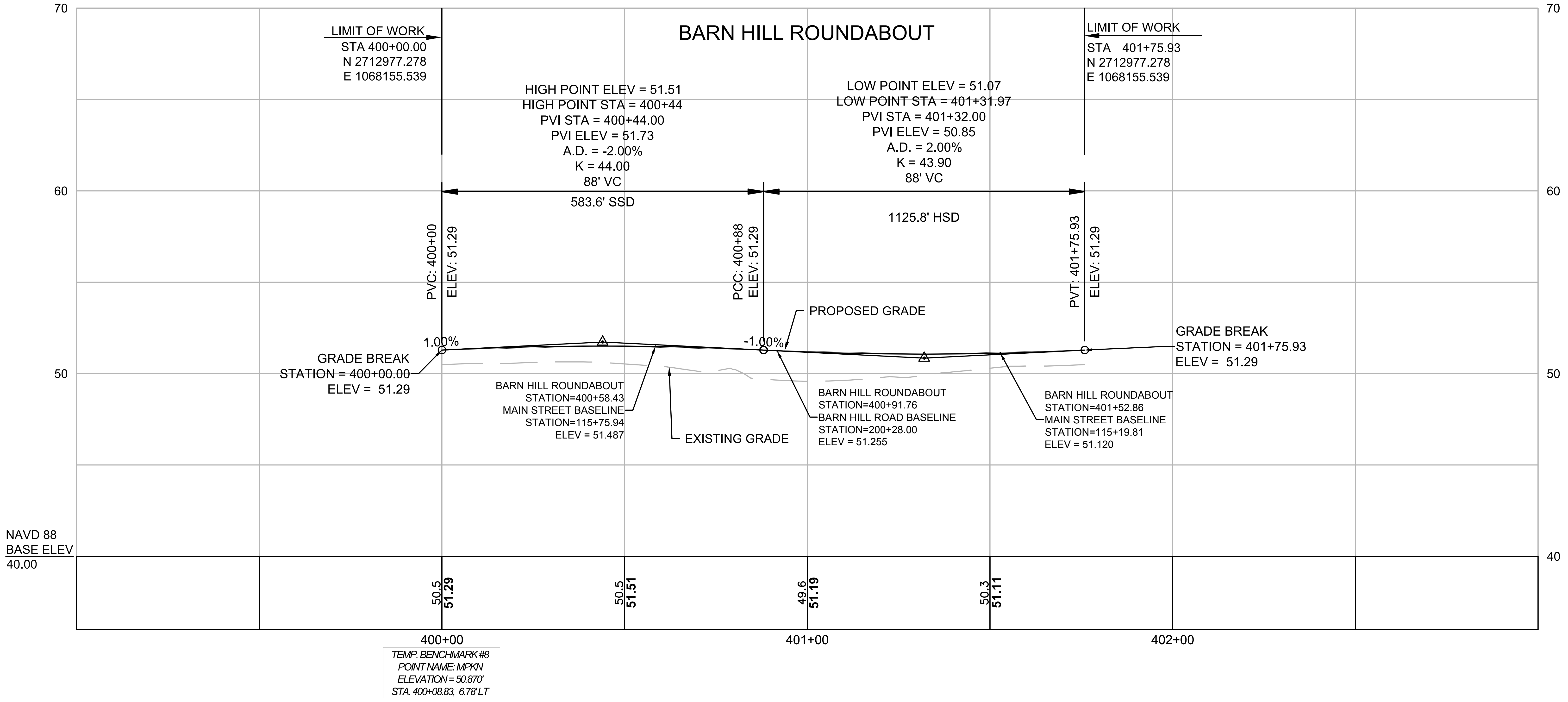
CHATHAM
MAIN STREET (ROUTE 28) FROM
GEORGE RYDER ROAD TO BARN HILL ROAD

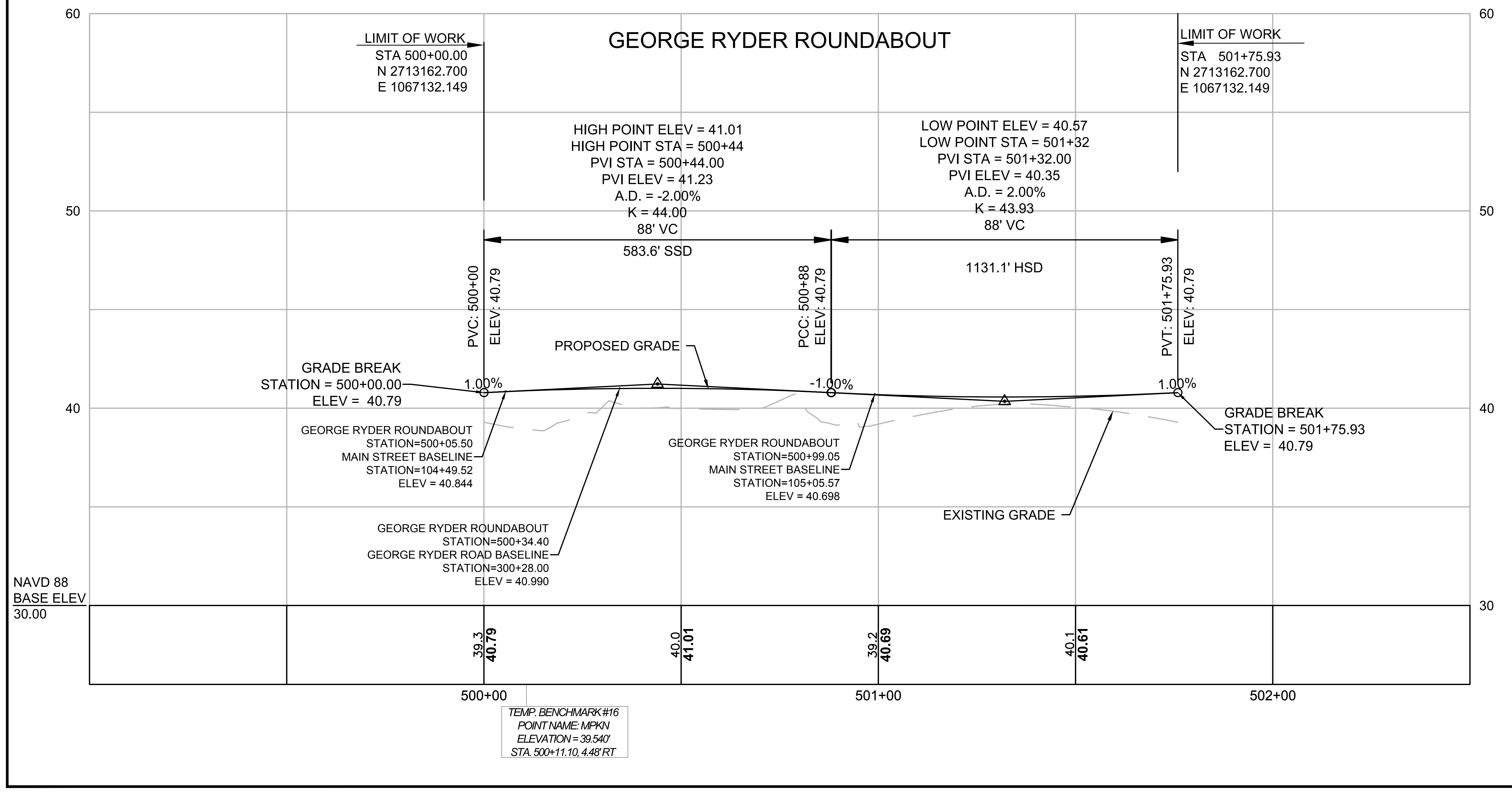
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	26	109
PROJECT FILE NO.	606596		

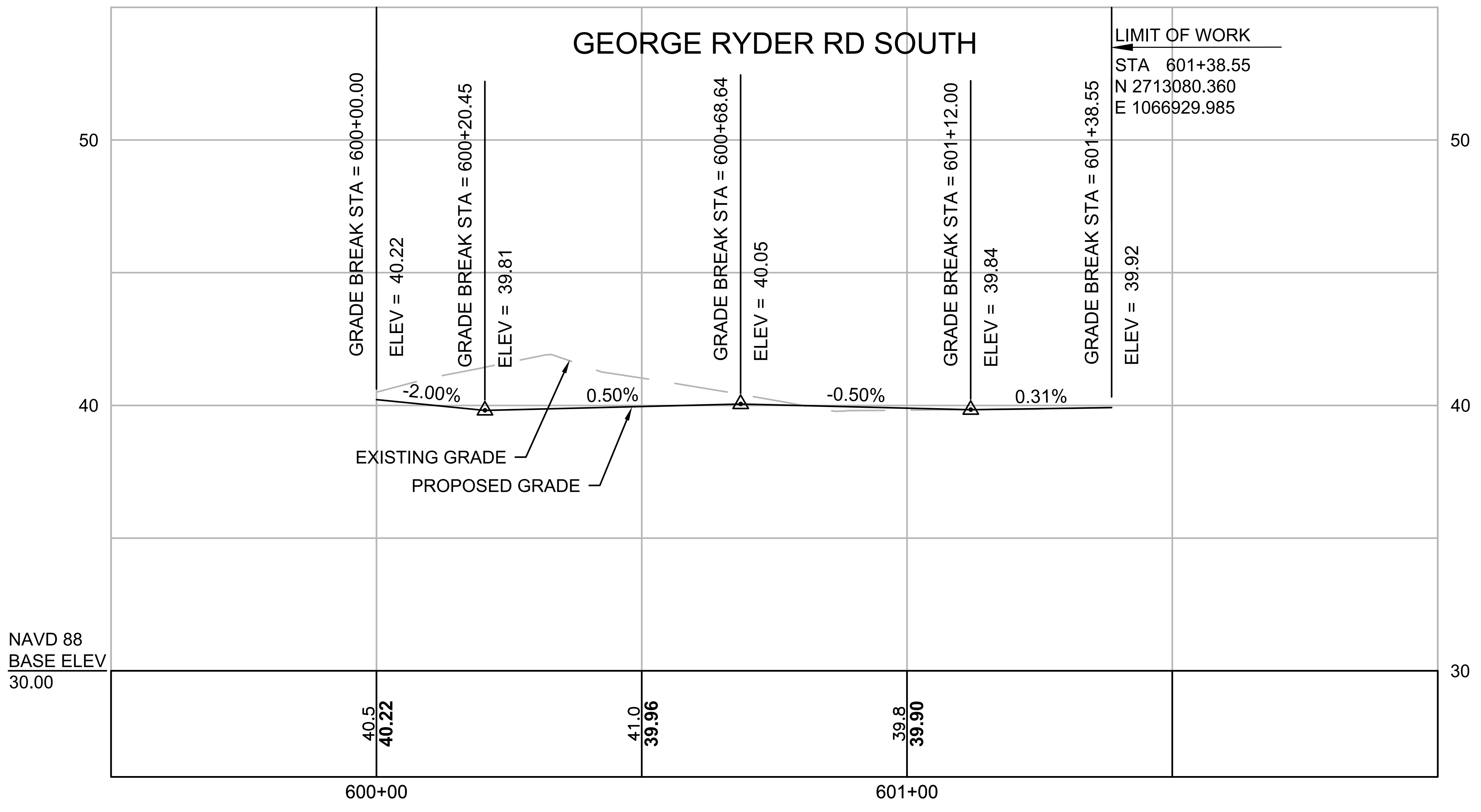
PROFILES

Plotted on 2-Apr-2018 2:01 PM

606596_HD(PROFILE).DWG







FOR CONSTRUCTION PLANS:
SEE SHEET NOS. 16&19

HOR. SCALE IN FEET
20 0 20 40
4 0 4 8
VER. SCALE IN FEET

CHATHAM
MAIN STREET (ROUTE 28) FROM GEORGE RYDER ROAD TO BARN HILL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	27	109
	PROJECT FILE NO.	606596	

CURB TIE & GRADING PLANS

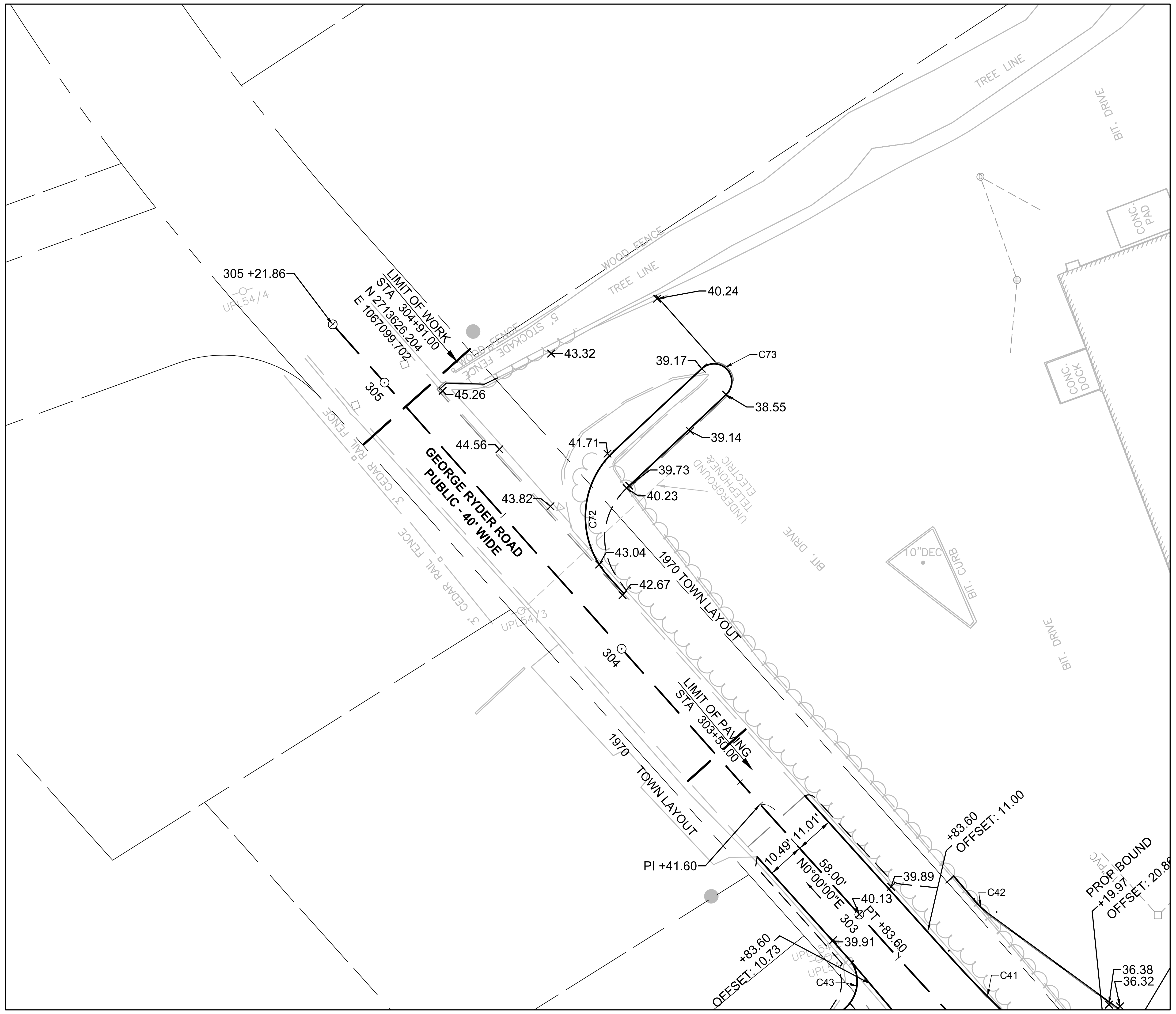
606596_HD(CTG).DWG Plotted on 30-Mar-2018 1:55 PM

N
CONTINUED ON SHEET NO. 28
CONTINUED ON SHEET NO. 29
1970 TOWN LAYOUT
GEORGE RYDER ROAD PUBLIC - 40' WIDE
MAIN STREET PUBLIC - 60' WIDE
MARKET PLACE 33' WIDE
1927 STATE HIGHWAY LAYOUT (NO. 2414)
PI +41.60
N0°00'00"E 58.00'
PT +83.60
+83.60 OFFSET: 11.00
+83.60 OFFSET: 10.73
80.64'
PC +74.90
N8°18'15"W 95.33'
PT +79.57
PC +32.57
N2°28'02"E 32.57'
PRC +24.48 500+00
PRC +97.87 300 +00.00
501+75.92
PCC +76.31
PCC +11.80
PC +39.45
PC +22.66
PI +70.37
S48°10'14"E 270.37'
BEGIN +00.00
LIMIT OF WORK
STA 100+76.61
N 2713372.902
E 1066802.783
LIMIT OF WORK
STA 601+38.55
N 2713080.360
E 1066929.985
MEET EXISTING
601+38.55
MAIN STREET STA 104+77.54=
GEORGE RYDER ROAD STA 300+00
N 2713136.681
E 1067121.721
MAIN STREET STA 103+69.71=
GEORGE RYDER ROAD SOUTH STA 600+00
N 2713181.392
E 1067024.360
GEORGE RYDER ROAD STA 300+28.00 =
GEORGE RYDER ROUNDABOUT STA 500+34.41
N 2713164.719
E 1067122.849
MAIN STREET STA 105+05.70 =
GEORGE RYDER ROUNDABOUT STA 500+98.81
N 2713117.030
E 1067141.526
MAIN STREET STA 104+49.48 =
GEORGE RYDER ROUNDABOUT STA 500+05.50
N 2713152.112
E 1067098.237
PROP BOUND +19.97 OFFSET: 20.86
PROP BOUND +20.35 OFFSET: 26.84
PROP BOUND +95.16 OFFSET: 29.18
PROP BOUND +65.11 OFFSET: 32.24
PROP BOUND +74.55 OFFSET: 16.04
PROP BOUND +49.43 OFFSET: 32.99
+79.57 OFFSET: 18.00
PROP BOUND +67.68 OFFSET: 33.32
PROP BOUND +45.37 OFFSET: 44.53
PROP BOUND +31.63 OFFSET: 40.04
PROP BOUND +48.65 OFFSET: 33.08
PROP BOUND +83.43 OFFSET: 32.99
+13.99 OFFSET: 17.57
+74.90 OFFSET: 17.45
PROP BOUND +93.72 OFFSET: 42.43
PROP BOUND +69.00 OFFSET: 27.24
+22.66 OFFSET: 18.00
+21.16 OFFSET: 47.20
PROP BOUND +78.31 OFFSET: 34.09
PROP BOUND +47.74 OFFSET: 51.51
PROP BOUND +15.41 OFFSET: 41.34
+13.99 OFFSET: 18.51
N/F RONALD C. MESERVEY MAP 8E, LOT 37-15 BK.2631, PG.28
N/F THE SUMNER G. N. HARDING TRUST OF 1997 THE JEAN C. HARDING TRUST OF 1997 MAP 8E, LOT 53-27 BK.11030, PG.34
N/F NEW CREEK II LLC MAP 8E, LOT 52-27A BK.25979, PG.95
N/F JKM PROPERTY FOUR LLC MAP 8E, LOT 1K-C73 LCC# 28422-I, CERT# 208888
N/F JKM PROPERTY THREE LLC MAP 8E, LOT 1J-C72 LCC# 28422-I, CERT# 208889
N/F JKM PROPERTY FOUR LLC MAP 8E, LOT 1H-C71 LCC# 28422-I, CERT#208887
N/F JKM PROPERTY THREE, LLC MAP 8D, LOT 53A-6A BK. 29489, PG. 67
N/F FM NOMINEE REALTY TRUST MAP 8D, LOT 48A-R42 BK.11513, PG.285
LESS GAS STATION 1 STORY WOOD #1698
GAS PUMP OVERHANG
1 STORY WOOD #1715
1 STORY WOOD #1705
1 STORY BRICK #1671
BUILDING OVERHANG W/ CONCRETE SIDEWALK
WOODED AREA
GRASS
HEDGE
BUSHES
STONE WALL
6' STOCKADE FENCE
12"CMP
12"PVC
4"PVC
6"PVC
1
2
3
4
5
6
7
8
22
23
25
26
27
101
102
103
104
105
301
302
303
500
501
600
601
600+00
SCALE: 1" = 20'
0
20
50
100

CHATHAM
MAIN STREET (ROUTE 28) FROM
GEORGE RYDER ROAD TO BARN HILL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	28	109
PROJECT FILE NO.	606596		

CURB TIE & GRADING PLANS



CONTINUED ON
SHEET NO. 27

0 20 50 100
SCALE: 1" = 20'

606596_HD(CTG).DWG Plotted on 30-Mar-2018 1:55 PM

CHATHAM
MAIN STREET (ROUTE 28) FROM GEORGE RYDER ROAD TO BARN HILL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	29	109
PROJECT FILE NO.	606596		

CURB TIE & GRADING PLANS

606596_HD(CTG).DWG Plotted on 30-Mar-2018 1:55 PM

CHATHAM
MAIN STREET (ROUTE 28) FROM GEORGE RYDER ROAD TO BARN HILL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	30	109
PROJECT FILE NO. 606596			

CURB TIE & GRADING PLANS

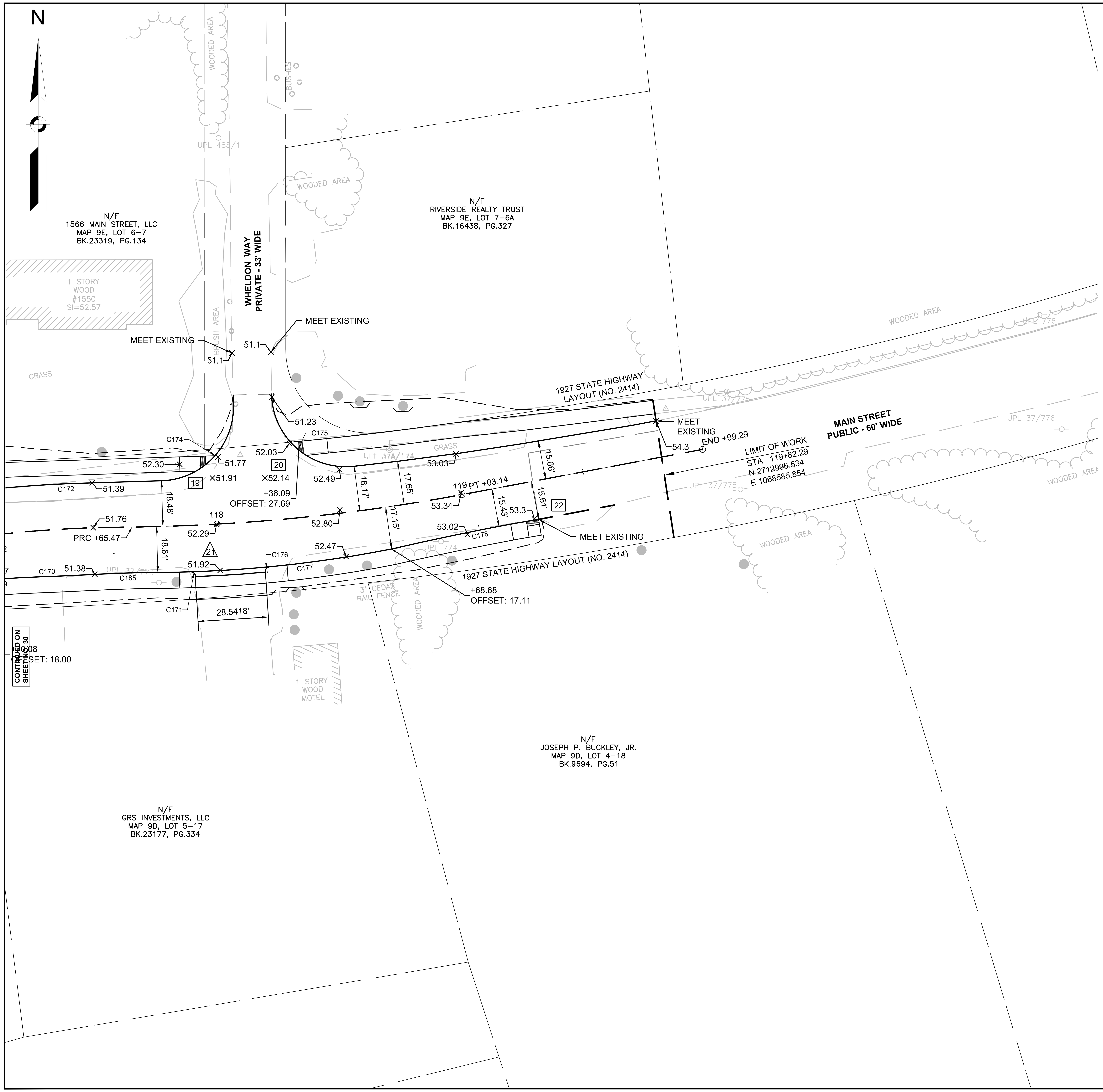
N
N/F TOWN OF CHATHAM MAP 9E, LOT 2-10 BK.15361, PG.181
N/F TOWN OF CHATHAM MAP 9E, LOT 3-9 BK.18912, PG.179
N/F TOWN OF CHATHAM MAP 9E, LOT 3B-9B BK.18912, PG.179
N/F CAPE COD COMMERCIAL HOOK FISHERMAN'S ASSOCIATION, INC. MAP 9E, LOT 5-8 BK.24712, PG.341
N/F 1566 MAIN STREET, LLC MAP 9E, LOT 6-7 BK.23319, PG.134
MAIN STREET STA 115+19.81 = BARN HILL ROUNDABOUT STA 401+52.86 N 2712959.375 E 1068129.423
MAIN STREET STA 115+47.82 = BARN HILL ROAD STA 200+00.00 N 2712949.277 E 1068155.539
MAIN STREET STA 115+75.94= BARN HILL ROUNDABOUT STA 400+58.43 N 2712945.428 E 1068183.273
BARN HILL ROAD STA 200+28.00 = BARN HILL ROUNDABOUT STA 400+91.76 N 2712922.096 E 1068162.260
25' WIDE DRAINAGE EASEMENT
15' WIDE UTILITY EASEMENT
RIGHT OF WAY
2 STORY WOOD #1566
1 STORY WOOD #1550 SI=52.57
WOODED AREA
1927 STATE HIGHWAY LAYOUT
1927 STATE HIGHWAY LAYOUT (NO. 2414)
MAIN STREET PUBLIC - 60' WIDE
WHELDON WAY PRIVATE - 33' WIDE
BARN HILL ROAD PUBLIC - 40' WIDE
1958 TOWN LAYOUT
MEET EXISTING
PROP BOUND +92.02 OFFSET: 36.78
PROP BOUND +04.96 OFFSET: 41.76
PROP BOUND +14.58 OFFSET: 48.44
PROP BOUND +69.96 OFFSET: 58.71
PROP BOUND +09.91 OFFSET: 47.92
+74.24 OFFSET: 18.90
+36.09 OFFSET: 27.69
PROP BOUND +45.48 OFFSET: 27.01
PROP BOUND +98.68 OFFSET: 34.15
PROP BOUND +11.87 OFFSET: 41.07
PROP BOUND +40.30 OFFSET: 52.20
PROP BOUND +47.24 OFFSET: 56.73
PROP BOUND +53.00 OFFSET: 67.81
+94.38 OFFSET: 17.71
+71.14 OFFSET: 11.80
PROP BOUND +66.10 OFFSET: 24.50
+70.08 OFFSET: 18.00
PROP BOUND +09.41 OFFSET: 24.50
PROP BOUND +84.20 OFFSET: 50.84
PRC +38.51
200 +00.00
PI +98.78
PI +14.94
PC +51.32
PC +74.05
PRC +65.47
PT +89.54
PC +47.42
PT +61.14
PC +71.14
PT +09.17
S13°53'22"E 47.42'
S21°45'11"E 110.00'
S17°23'41"E 62.12'
LIMIT OF WORK STA 202+43.67 N 2712719.044 E 1068235.010
OLLIE'S RESTAURANT 2 STORY WOOD #1603
LARRY'S PX RESTAURANT 1 STORY WOOD #1579-1595
DUNKIN DONUTS 2 STORY WOOD #59
1 STORY WOOD MOTEL
N/F BARN HILL PROPERTIES, INC MAP 9D, LOT 44-12A BK.20908, PG.180
N/F BARN HILL PROPERTIES, INC MAP 9D, LOT 43-12 BK.21678, PG.163
N/F GRS INVESTMENTS, LLC MAP 9D, LOT 6-16 BK.23177, PG.334
N/F GRS INVESTMENTS, LLC MAP 9D, LOT 5-17 BK.23177, PG.334
6' STOCKADE FENCE
3' CEDAR RAIL FENCE
CONTINUED ON SHEET NO. 29
CONTINUED ON SHEET NO. 31
0 20 50 100
SCALE: 1" = 20'

Plotted on 30-Mar-2018 1:56 PM 606596_HD(CTG).DWG

CHATHAM
MAIN STREET (ROUTE 28) FROM
GEORGE RYDER ROAD TO BARN HILL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	31	109
	PROJECT FILE NO.	606596	

CURB TIE & GRADING PLANS



0 20 50 100
SCALE: 1" = 20'

CHATHAM
MAIN STREET (ROUTE 28) FROM GEORGE RYDER ROAD TO BARN HILL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	32	109
PROJECT FILE NO. 606596			

CURB TIE & GRADING PLANS

CURVE TABLE

CURVE #	LENGTH	DELTA	RADIUS	TANGENT	NORTHING	EASTING	PC STATION & OFFSET	PT STATION & OFFSET
C1	22.28	56°26'58"	22.61	12.138	2713386.312 2713366.424	1066822.429 1066830.299	100+82.30 OFFSET: 23.09	101+01.43 OFFSET: 13.52
C2	46.89	89°24'10"	30.05	29.740	2713297.263 2713295.686	1066860.498 1066818.250	101+39.63 OFFSET: 47.22	101+70.06 OFFSET: 17.87
C3	3.11	89°02'05"	2.00	1.967	2713266.437 2713266.620	1066948.635 1066951.434	102+56.29 OFFSET: 17.94	102+58.26 OFFSET: 19.94
C4	5.16	0°35'29"	500.00	2.580	2713266.437 2713269.787	1066948.635 1066944.710	102+51.13 OFFSET: 17.82	102+56.29 OFFSET: 17.94
C5	3.08	88°10'18"	2.00	1.937	2713222.774 2713219.996	1066999.606 1066999.776	103+23.26 OFFSET: 19.94	103+25.47 OFFSET: 17.98
C6	19.92	6°57'29"	164.00	9.970	2713220.177 2713207.886	1066999.601 1067015.256	103+25.19 OFFSET: 18.00	103+47.29 OFFSET: 18.00
C7	45.75	27°18'12"	96.00	23.316	2713207.886 2713192.925	1067015.256 1067058.031	103+47.29 OFFSET: 18.00	103+97.01 OFFSET: 24.35
C8	18.62	19°43'55"	54.05	9.401	2713192.925 2713194.294	1067058.031 1067076.504	103+97.01 OFFSET: 24.35	104+15.69 OFFSET: 31.90
C9	44.72	80°24'44"	31.86	26.930	2713194.294 2713227.480	1067076.504 1067100.809	300+60.83 OFFSET: 46.27	300+93.64 OFFSET: 18.00
C10	30.28	86°45'08"	20.00	18.897	2713154.072 2713181.469	1066990.592 1066988.574	103+40.93 OFFSET: 19.01	103+55.73 OFFSET: 40.53
C11	46.30	5°36'19"	473.24	23.167	2713119.662 2713154.072	1066959.646 1066990.592	600+42.53 OFFSET: 8.99	600+89.67 OFFSET: 8.97
C12	48.00	5°34'31"	493.28	24.018	2713087.261 2713119.662	1066924.258 1066959.646	600+89.67 OFFSET: 8.97	601+38.50 OFFSET: 8.97
C13	28.60	3°12'19"	511.25	14.304	2713073.435 2713092.305	1066935.733 1066957.219	601+10.45 OFFSET: 8.99	601+38.49 OFFSET: 9.00
C14	15.52	88°54'03"	10.00	9.810	2713091.925 2713092.305	1066971.219 1066957.219	601+00.82 OFFSET: 18.90	601+10.45 OFFSET: 8.99
C15	14.98	85°48'19"	10.00	9.293	2713125.684 2713112.072	1066989.986 1066990.245	600+64.49 OFFSET: 9.01	600+74.11 OFFSET: 18.37
C16	28.50	33°29'45"	48.74	14.668	2713148.607 2713137.332	1067025.816 1067000.087	103+69.00 OFFSET: 50.31	103+84.55 OFFSET: 28.99
C17	36.45	52°12'26"	40.00	19.599	2713137.038 2713148.607	1067059.061 1067025.816	103+84.55 OFFSET: 28.99	104+16.70 OFFSET: 27.95
C18	8.63	176°37'03"	2.80	94.830	2713176.396 2713171.332	1067042.115 1067039.730	103+88.01 OFFSET: 2.59	103+88.20 OFFSET: 3.00
C19	1.54	88°21'09"	1.00	0.972	2713173.335 2713174.607	1067046.968 1067046.400	103+92.89 OFFSET: 3.01	103+93.91 OFFSET: 2.05
C20	1.60	91°47'45"	1.00	1.032	2713168.988 2713169.572	1067044.277 1067045.589	103+93.06 OFFSET: 2.99	103+94.05 OFFSET: 1.95
C21	1.57	89°50'27"	1.00	0.997	2713170.263 2713169.667	1067057.555 1067056.275	104+03.98 OFFSET: 2.00	104+04.98 OFFSET: 3.00
C22	1.59	91°01'11"	1.00	1.018	2713165.879 2713164.590	1067054.886 1067055.498	104+03.99 OFFSET: 2.04	104+04.99 OFFSET: 3.04
C23	11.43	18°42'23"	35.00	5.765	2713156.610 2713161.927	1067073.272 1067063.214	104+13.08 OFFSET: 3.01	104+24.12 OFFSET: 5.06
C24	2.72	103°42'56"	1.50	1.910	2713156.610 2713157.207	1067073.272 1067075.554	104+24.12 OFFSET: 5.06	104+26.18 OFFSET: 3.84
C25	4.44	84°48'54"	3.00	2.739	2713161.235 2713164.704	1067076.394 1067074.313	104+22.82 OFFSET: 2.99	104+25.81 OFFSET: 0.26
C26	2.75	105°09'50"	1.50	1.961	2713188.923 2713187.031	1067118.676 1067120.124	300+50.41 OFFSET: 3.05	300+52.37 OFFSET: 4.44
C27	14.33	23°27'53"	35.00	7.269	2713188.923 2713203.132	1067118.676 1067119.525	300+52.37 OFFSET: 4.44	300+66.70 OFFSET: 2.67
C28	1.85	105°57'48"	1.00	1.326	2713215.852 2713214.716	1067118.955 1067117.833	300+78.54 OFFSET: 3.00	300+79.52 OFFSET: 1.73
C29	1.29	74°02'12"	1.00	0.754	2713214.451 2713215.298	1067123.935 1067123.079	300+77.44 OFFSET: 3.01	300+78.38 OFFSET: 2.28
C30	11.86	9°03'28"	75.00	5.941	2713203.256 2713191.708	1067125.570 1067128.203	300+54.76 OFFSET: 5.19	300+66.27 OFFSET: 3.36
C31	5.19	99°10'51"	3.00	3.524	2713187.843 2713191.708	1067125.767 1067128.203	300+51.05 OFFSET: 2.61	300+54.76 OFFSET: 5.19
C32	1.86	106°29'17"	1.00	1.339	2713225.708 2713226.842	1067120.993 1067122.125	300+88.97 OFFSET: 1.71	300+89.93 OFFSET: 3.00
C33	1.30	74°24'29"	1.00	0.759	2713227.147 2713226.286	1067116.117 1067116.967	300+90.13 OFFSET: 2.19	300+91.10 OFFSET: 2.90
C34	46.08	5°16'48"	500.00	23.054	2713330.369 2713284.535	1067087.921 1067092.473	301+51.30 OFFSET: 18.01	301+96.84 OFFSET: 16.22
C35	7.79	179°14'33"	2.49	376.482	2713286.318 2713285.621	1067113.436 1067108.507	301+50.06 OFFSET: 1.99	301+50.04 OFFSET: 2.99
C36	10.33	59°10'17"	10.00	5.677	2713294.319 2713285.120	1067132.369 1067128.781	301+46.64 OFFSET: 18.00	301+55.22 OFFSET: 22.88
C37	15.71	180°00'00"	5.00	INFINITY	2713292.113 2713301.931	1067167.420 1067165.523	301+47.98 OFFSET: 57.23	301+57.97 OFFSET: 56.84
C38	15.71	180°00'00"	5.00	INFINITY	2713331.386 2713341.205	1067159.832 1067157.935	301+88.97 OFFSET: 55.29	301+99.74 OFFSET: 54.57
C39	10.57	60°35'22"	10.00	5.842	2713333.336 2713325.866	1067118.127 1067124.907	301+87.86 OFFSET: 19.94	301+96.29 OFFSET: 14.12
C40	39.74	6°04'20"	375.00	19.890	2713372.583 2713333.336	1067111.984 1067118.127	301+96.19 OFFSET: 14.13	302+36.63 OFFSET: 11.51

CURVE TABLE

CURVE #	LENGTH	DELTA	RADIUS	TANGENT	NORTHING	EASTING	PC STATION & OFFSET	PT STATION & OFFSET
C41	38.35	5°51'36"	375.00	19.193	2713410.869 2713372.583	1067110.024 1067111.984	302+36.63 OFFSET: 11.51	302+75.55 OFFSET: 10.96
C42	6.93	13°13'53"	30.00	3.479	2713416.840 2713409.957	1067125.717 1067126.352	302+74.42 OFFSET: 27.27	302+81.56 OFFSET: 26.69
C43	14.35	82°14'17"	10.00	8.729	2713418.330 2713426.678	1067078.271 1067088.436	302+83.14 OFFSET: 20.75	302+91.47 OFFSET: 10.59
C44	12.31	70°33'08"	10.00	7.074	2713330.369 2713339.433	1067087.921 1067080.761	301+96.84 OFFSET: 16.22	302+06.35 OFFSET: 22.10
C45	95.85	305°05'08"	18.00	9.353	2713134.642 2713150.165	1067103.767 1067109.648	500+12.79 OFFSET: 10.00	501+61.88 OFFSET: 10.00
C46	38.44	183°32'24"	12.00	388.324	2713126.561 2713146.973	1067110.135 1067122.738	500+36.20 OFFSET: 17.71	501+44.88 OFFSET: 12.63
C47	18.74	107°25'35"	10.00	13.616	2713150.165 2713135.338	1067109.648 1067103.332	500+12.79 OFFSET: 10.00	501+61.88 OFFSET: 10.00
C48	62.51	71°37'32"	50.00	36.078	2713117.293 2713086.901	1067075.583 1067125.585	104+43.31 OFFSET: 41.22	105+15.04 OFFSET: 32.55
C49	36.10	41°22'18"	50.00	18.879	2713077.066 2713086.901	1067159.512 1067125.585	105+15.04 OFFSET: 32.55	105+44.11 OFFSET: 18.01
C50	72.91	16°38'34"	251.00	36.713	2713077.066 2713042.365	1067159.512 1067223.342	105+44.11 OFFSET: 18.01	106+11.78 OFFSET: 18.00
C51	4.88	93°13'24"	3.00	3.174	2713099.376 2713095.203	1067157.313 1067158.577	105+29.08 OFFSET: 1.96	105+32.69 OFFSET: 4.34
C52	2.96	112°59'04"	1.50	2.266	2713104.682 2713104.758	1067162.893 1067160.392	105+27.90 OFFSET: 4.12	105+29.89 OFFSET: 5.69
C53	17.42	22°10'25"	45.00	8.818	2713104.682 2713091.993	1067162.893 1067174.662	105+29.89 OFFSET: 5.69	105+47.33 OFFSET: 2.99
C54	11.69	10°18'13"	65.00	5.860	2713089.069 2713095.203	1067168.509 1067158.577	105+32.69 OFFSET: 4.34	105+44.11 OFFSET: 3.01
C55	5.41	1°19'56"	232.68	2.705	2713091.980 2713088.847	1067174.665 1067179.076	105+47.33 OFFSET: 2.99	105+52.81 OFFSET: 2.99
C56	1.57	89°45'17"	1.00	0.996	2713087.459 2713088.847	1067179.331 1067179.076	105+52.81 OFFSET: 2.99	105+53.82 OFFSET: 1.99
C57	1.57	90°14'20"	1.00	1.004	2713083.905 2713084.161	1067175.673 1067177.067	105+52.82 OFFSET: 3.01	105+53.82 OFFSET: 2.01
C58	8.83	2°08'39"	236.00	4.416	2713089.069 2713083.905	1067168.509 1067175.673	105+44.11 OFFSET: 3.01	105+52.82 OFFSET: 3.01
C59	1.62	92°41'15"	1.00	1.048	2713078.713 2713077.297	1067185.456 1067185.754	105+63.74 OFFSET: 1.96	105+64.73 OFFSET: 3.01
C60	1.52	87°15'58"	1.00	0.953	2713082.300 2713082.015	1067189.074 1067187.723	105+63.91 OFFSET: 2.04	105+64.91 OFFSET: 2.99
C61	9.38	181°54'12"	2.95	177.794	2713067.327 2713072.607	1067203.514 1067206.163	105+84.92 OFFSET: 3.01	105+84.82 OFFSET: 2.90
C62	38.12	36°23'55"	60.00	19.726	2713205.425 2713171.887	1067140.413 1067157.142	300+67.01 OFFSET: 18.34	104+81.27 OFFSET: 49.76
C63	44.22	50°43'31"	49.95	23.678	2713131.511 2713171.887	1067171.320 1067157.142	104+81.27 OFFSET: 49.76	105+17.24 OFFSET: 31.30
C64	31.39	59°56'52"	30.00	17.302	2713131.511 2713104.118	1067171.320 1067183.493	105+17.24 OFFSET: 31.30	105+47.32 OFFSET: 18.00
C65	47.82	12°44'39"	215.00	24.010	2713104.118 2713080.477	1067183.493 1067224.949	105+47.32 OFFSET: 18.00	105+99.14 OFFSET: 18.00
C66	8.03	91°58'13"	5.00	5.175	2713080.477 2713083.248	1067224.949 1067231.585	105+99.14 OFFSET: 18.00	106+04.69 OFFSET: 23.11
C67	6.16	88°11'20"	4.00	3.876	2713095.518 2713100.652	1067236.382 1067234.230	106+04.52 OFFSET: 36.29	105+99.79 OFFSET: 40.20
C68	41.49	12°19'44"	192.80	20.824	2713120.933 2713100.652	1067198.130 1067234.230	105+99.79 OFFSET: 40.20	105+49.65 OFFSET: 40.20
C69	9.49	60°26'07"	9.00	5.242	2713129.190 2713120.933	1067194.403 1067198.130	105+49.65 OFFSET: 40.20	105+39.97 OFFSET: 44.60
C70	65.06	50°57'19"	73.15	34.856	2713129.190 2713188.495	1067194.403 1067173.345	105+39.97 OFFSET: 44.60	104+82.13 OFFSET: 72.93
C71	24.35	36°42'55"	38.00	12.610	2713209.885 2713188.495	1067162.601 1067173.345	104+82.13 OFFSET: 72.93	104+68.48 OFFSET: 83.03
C72	38.70	88°41'41"	25.00	24.437	2713577.864 2713552.883	1067134.531 1067110.088	304+11.15 OFFSET: 10.74	304+42.82 OFFSET: 35.05
C73	15.71	180°00'00"	5.00	INFINITY	2713568.623 2713578.621	1067168.741 1067168.519	304+43.73 OFFSET: 69.03	304+33.73 OFFSET: 69.30
C74	30.38	3°25'35"	508.00	15.195	2713042.174 2713032.602	1067223.863 1067252.691	106+11.88 OFFSET: 17.82	106+41.66 OFFSET: 18.31
C75	3.18	91°04'42"	2.00	2.038	2713030.077 2713032.602	1067254.023 1067252.691	106+41.66 OFFSET: 18.31	106+43.60 OFFSET: 21.30
C76	7.86	90°06'21"	5.00	5.009	2713072.841 2713066.527	1067260.317 1067263.517	106+37.17 OFFSET: 22.39	106+42.19 OFFSET: 17.29
C81	23.63	1°43'22"	786.00	11.818	2713066.527 2713059.537	1067263.517 1067286.093	106+42.19 OFFSET: 17.29	106+66.27 OFFSET: 16.83
C82	7.90	90°28'49"	5.00	5.044	2713059.537 2713062.933	1067286.093 1067292.332	106+66.27 OFFSET: 16.82	106+71.51 OFFSET: 21.73
C83	3.12	89°30'30"	2.00	1.983	2713024.200 2713022.704	1067284.477 1067282.091	106+72.01 OFFSET: 19.77	106+73.89 OFFSET: 17.72
C84	27.62	3°06'56"	508.00	13.816	2713024.203 2713018.749	1067284.478 1067311.555	106+73.89 OFFSET: 17.71	107+00.98 OFFSET: 16.47

CURVE TABLE

CURVE #	LENGTH	DELTA	RADIUS	TANGENT	NORTHING	EASTING	PC STATION & OFFSET	PT STATION & OFFSET
C85	21.68	2°29'06"	500.00	10.844	2713014.584 2713018.749	1067332.834 1067311.555	107+00.98 OFFSET: 16.47	107+22.27 OFFSET: 15.94
C86	51.01	3°34'23"	818.00	25.515	2713014.584 2713005.263	1067332.834 1067382.980	107+22.27 OFFSET: 15.94	107+72.40 OFFSET: 16.23
C87	8.02	91°54'41"	5.00	5.170	2713056.831 2713050.618	1067315.547 1067319.162	107+00.50 OFFSET: 22.52	107+05.53 OFFSET: 17.29
C88	40.07	2°55'16"	786.00	20.040	2713050.618 2713042.025	1067319.162 1067358.296	107+01.15 OFFSET: 16.29	107+41.94 OFFSET: 15.91
C89	3.08	88°17'14"	2.00	1.941	2713068.239 2713066.842	1067320.782 1067318.372	106+96.54 OFFSET: 31.91	106+98.64 OFFSET: 33.82
C90	44.80	3°20'23"	768.57	22.406	2713068.239 2713058.639	1067320.782 1067364.534	106+98.66 OFFSET: 33.82	107+45.15 OFFSET: 33.38
C91	3.15	90°09'42"	2.00	2.006	2713056.296 2713058.639	1067366.127 1067364.534	107+45.15 OFFSET: 33.38	107+47.21 OFFSET: 31.36
C92	7.85	89°59'17"	5.00	4.999	2713042.025 2713045.993	1067358.296 1067364.148	107+41.94 OFFSET: 15.91	107+47.09 OFFSET: 20.87
C93	38.14	72°50'07"	30.00	22.132	2712980.006 2713005.263	1067408.097 1067382.980	107+72.40 OFFSET: 16.23	107+99.88 OFFSET: 37.87
C94	7.24	82°56'20"	5.00	4.419	2713041.980 2713036.383	1067387.658 1067391.198	107+71.50 OFFSET: 20.77	107+75.92 OFFSET: 15.76
C95	66.67	4°51'36"	786.00	33.356	2713036.396 2713029.358	1067391.200 1067457.480	107+75.92 OFFSET: 15.77	108+43.77 OFFSET: 16.02
C96	38.29	99°42'39"	22.00	26.085	2712997.269 2712972.982	1067457.583 1067434.315	108+25.57 OFFSET: 42.07	108+46.04 OFFSET: 16.00
C97	6.28	90°00'00"	4.00	4.000	2712988.113 2712992.358	1067538.816 1067535.077	109+23.69 OFFSET: 16.00	109+27.69 OFFSET: 20.00
C98	6.28	90°00'00"	4.00	4.000	2712990.334 2712986.595	1067567.013 1067562.768	109+51.69 OFFSET: 20.00	109+55.69 OFFSET: 16.00
C99	7.86	90°01'31"	5.00	5.002	2713023.096 2713027.771	1067556.008 1067561.314	109+42.64 OFFSET: 16.00	109+47.64 OFFSET: 21.00
C100	7.85	90°00'00"	5.00	5.000	2713026.394 2713021.088	1067583.012 1067587.686	109+69.38 OFFSET: 21.00	109+74.38 OFFSET: 16.00
C101	6.28	90°00'00"	4.00	4.000	2712981.768 2712986.013	1067638.923 1067635.184	110+24.00 OFFSET: 16.00	110+28.00 OFFSET: 20.00
C102	6.28	90°00'00"	4.00	4.000	2712983.989 2712980.250	1067667.120 1067662.875	110+52.00 OFFSET: 20.00	110+56.00 OFFSET: 16.00
C103	6.28	90°00'00"	4.00	4.000	2712978.237 2712982.482	1067694.630 1067690.891	110+79.82 OFFSET: 16.00	110+83.82 OFFSET: 20.00
C104	7.85	90°00'00"	5.00	5.000	2713013.774 2713018.448	1067703.084 1067708.390	110+90.01 OFFSET: 16.00	110+95.01 OFFSET: 21.00
C105	7.85	90°00'00"	5.00	5.000	2713017.550 2713012.244	1067722.549 1067727.222	111+09.20 OFFSET: 21.00	111+14.20 OFFSET: 16.00
C106	6.28	90°00'00"	4.00	4.000	2712980.458 2712976.719	1067722.827 1067718.582	111+07.82 OFFSET: 20.00	111+11.82 OFFSET: 16.00
C107	8.04	92°10'20"	5.00	5.193	2712969.816 2712964.502	1067718.144 1067723.007	111+07.82 OFFSET: 26.92	111+13.01 OFFSET: 31.91
C110	6.28	90°00'00"	4.00	4.000	2712973.635 2712977.880	1067767.252 1067763.513	111+52.59 OFFSET: 16.00	111+56.59 OFFSET: 20.00
C111	6.28	90°00'00"	4.00	4.000	2712975.856 2712972.117	1067795.449 1067791.204	111+80.59 OFFSET: 20.00	111+84.59 OFFSET: 16.00
C112	7.85	90°00'00"	5.00	5.000	2713008.528 2713013.202	1067785.852 1067791.158	111+72.94 OFFSET: 16.00	111+77.94 OFFSET: 21.00
C113	7.85	90°00'00"	5.00	5.000	2713012.443 2713007.136	1067803.134 1067807.808	111+89.94 OFFSET: 21.00	111+94.94 OFFSET: 16.00
C115	6.28	90°00'00"	4.00	4.000	2712969.455 2712973.700	1067833.190 1067829.451	112+18.66 OFFSET: 16.00	112+22.66 OFFSET: 20.00
C116	6.28	90°00'00"	4.00	4.000	2712971.676 2712967.937	1067861.387 1067857.142	112+46.66 OFFSET: 20.00	112+50.66 OFFSET: 16.00
C117	3.14	90°00'00"	2.00	2.000	2712959.953 2712957.831	1067856.636 1067858.505	112+46.77 OFFSET: 27.84	112+48.66 OFFSET: 30.00
C118	3.28	92°17'19"	2.04	2.119	2712956.640 2712958.809	1067872.723 1067874.702	112+62.92 OFFSET: 30.29	112+64.76 OFFSET: 28.00
C119	6.28	89°58'24"	4.00	3.998	2712966.794 2712971.038	1067875.205 1067871.466	112+60.76 OFFSET: 16.00	112+64.76 OFFSET: 20.00
C120	6.42	91°58'21"	4.00	4.140	2712966.642 2712962.915	1067929.710 1067925.328	113+15.38 OFFSET: 20.42	113+19.45 OFFSET: 16.49
C121	15.71	180°00'00"	5.00	INFINITY	2712937.866 2712939.644	1067990.249 1068000.089	113+82.10 OFFSET: 40.16	113+91.77 OFFSET: 37.60
C122	7.96	182°22'41"	2.50	120.463	2712978.252 2712973.282	1068026.395 1068025.854	114+14.75 OFFSET: 2.00	114+14.89 OFFSET: 3.00
C123	57.25	43°44'17"	75.00	30.103	2712922.744 2712946.470	1068103.975 1068053.389	114+43.89 OFFSET: 27.01	115+05.46 OFFSET: 42.65
C124	61.10	50°00'28"	70.00	32.647	2712926.547 2712954.901	1068114.762 1068062.822	114+52.88 OFFSET: 18.00	115+16.34 OFFSET: 35.81
C125	1.40	80°16'21"	1.00	0.843	2712969.658 2712970.425	1068067.133 1068068.170	114+56.20 OFFSET: 2.95	114+57.17 OFFSET: 2.10
C126	1.74	99°43'39"	1.00	1.186	2712974.374 2712975.603	1068069.107 1068068.197	114+56.76 OFFSET: 3.06	114+57.76 OFFSET: 1.93
C127	1.40	80°02'34"	1.00	0.840	2712974.833 2712974.070	1068080.349 1068079.314	114+67.85 OFFSET: 2.72	114+68.76 OFFSET: 3.62

606596_HD(CTG).DWG Plotted on 30-Mar-2018 1:56 PM

CHATHAM
MAIN STREET (ROUTE 28) FROM GEORGE RYDER ROAD TO BARN HILL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	33	109
PROJECT FILE NO.	606596		

CURB TIE & GRADING PLANS

CURVE TABLE

CURVE #	LENGTH	DELTA	RADIUS	TANGENT	NORTHING	EASTING	PC STATION & OFFSET	PT STATION & OFFSET
C128	1.66	94°57'06"	1.00	1.090	2712969.874 2712968.650	1068078.300 1068079.122	114+67.38 OFFSET: 1.57	114+68.36 OFFSET: 2.67
C129	27.02	23°48'50"	65.00	13.706	2712959.240 2712968.650	1068104.239 1068079.122	114+68.36 OFFSET: 2.67	114+95.33 OFFSET: 7.33
C130	2.78	106°20'36"	1.50	2.003	2712959.240 2712960.089	1068104.239 1068106.485	114+95.33 OFFSET: 7.30	114+97.36 OFFSET: 5.93
C131	5.02	95°54'23"	3.00	3.326	2712969.758 2712973.249	1068108.108 1068105.340	114+93.20 OFFSET: 6.59	114+96.58 OFFSET: 3.84
C132	25.17	16°57'54"	85.00	12.677	2712926.547 2712908.769	1068114.762 1068132.446	115+16.34 OFFSET: 35.81	115+41.34 OFFSET: 45.93
C133	21.25	24°20'42"	50.00	10.785	2712888.142 2712906.248	1068130.165 1068119.359	115+30.08 OFFSET: 53.30	115+44.44 OFFSET: 66.04
C134	6.28	89°58'35"	4.00	3.998	2712875.846 2712873.336	1068134.317 1068139.385	200+60.92 OFFSET: 39.50	200+65.04 OFFSET: 35.72
C135	41.55	31°44'29"	75.00	21.323	2712876.208 2712908.769	1068157.395 1068132.446	200+33.78 OFFSET: 32.14	200+69.04 OFFSET: 17.93
C136	43.95	25°10'43"	100.00	22.333	2712988.991 2712995.782	1068094.111 1068137.171	114+79.67 OFFSET: 19.73	115+15.68 OFFSET: 36.96
C137	53.57	61°23'26"	50.00	29.682	2712987.670 2712995.782	1068187.570 1068137.171	115+15.68 OFFSET: 36.96	115+86.63 OFFSET: 41.77
C138	60.20	53°04'09"	65.00	32.457	2712987.670 2712974.306	1068187.570 1068244.087	115+86.63 OFFSET: 41.77	116+41.12 OFFSET: 18.18
C139	18.50	88°18'50"	12.00	11.652	2712975.229 2712989.250	1068248.063 1068257.169	116+45.19 OFFSET: 18.35	116+56.74 OFFSET: 30.44
C140	43.06	193°29'06"	12.75	107.845	2712963.403 2712939.698	1068157.790 1068148.883	401+15.55 OFFSET: 16.33	400+15.01 OFFSET: 13.70
C141	23.04	146°39'01"	9.00	30.046	2712939.393 2712955.795	1068163.444 1068168.762	400+79.66 OFFSET: 15.34	400+41.75 OFFSET: 13.26
C142	22.76	19°59'25"	65.23	11.497	2712958.646 2712956.359	1068207.332 1068229.861	116+02.09 OFFSET: 9.61	116+23.81 OFFSET: 3.18
C143	2.98	113°48'28"	1.50	2.301	2712958.646 2712956.993	1068207.332 1068205.439	115+99.93 OFFSET: 8.34	116+02.09 OFFSET: 9.61
C144	4.69	89°34'42"	3.00	2.978	2712948.677 2712946.474	1068207.480 1068211.088	116+00.39 OFFSET: 0.21	116+03.53 OFFSET: 3.05
C145	1.59	91°08'10"	1.00	1.020	2712950.351 2712951.542	1068230.962 1068231.750	116+23.78 OFFSET: 2.92	116+24.77 OFFSET: 1.90
C146	1.39	79°50'28"	1.00	0.836	2712955.588 2712956.359	1068230.885 1068229.861	116+23.81 OFFSET: 3.18	116+24.67 OFFSET: 2.24
C147	1.60	91°44'47"	1.00	1.031	2712958.379 2712957.181	1068241.560 1068240.769	116+34.68 OFFSET: 1.97	116+35.68 OFFSET: 3.00
C148	1.54	88°15'13"	1.00	0.970	2712953.273 2712952.506	1068241.631 1068242.793	116+34.80 OFFSET: 2.03	116+35.80 OFFSET: 3.00
C149	7.66	175°26'15"	2.50	62.769	2712955.988 2712960.911	1068261.251 1068260.389	116+54.58 OFFSET: 3.00	116+54.65 OFFSET: 2.00
C150	59.54	97°28'08"	35.00	39.888	2712932.871 2712887.573	1068219.637 1068192.869	115+80.71 OFFSET: 58.32	116+09.41 OFFSET: 18.00
C151	4.82	92°05'57"	3.00	3.112	2712898.635 2712894.471	1068166.244 1068165.096	200+51.65 OFFSET: 1.86	200+55.18 OFFSET: 4.19
C152	2.78	106°20'33"	1.50	2.003	2712900.203 2712901.656	1068173.711 1068171.799	200+50.26 OFFSET: 4.31	200+52.28 OFFSET: 5.75
C153	18.03	24°37'45"	41.96	9.159	2712900.203 2712882.694	1068173.711 1068177.413	200+52.28 OFFSET: 5.75	200+70.44 OFFSET: 3.07
C154	14.21	9°02'41"	90.00	7.119	2712881.727 2712894.471	1068171.343 1068165.096	200+55.18 OFFSET: 4.19	200+69.09 OFFSET: 2.93
C155	1.57	90°00'00"	1.00	1.000	2712874.732 2712874.170	1068174.111 1068175.409	200+76.61 OFFSET: 2.95	200+77.61 OFFSET: 1.95
C156	1.59	86°26'34"	1.05	0.991	2712875.630 2712876.950	1068179.099 1068179.686	200+76.63 OFFSET: 3.05	200+77.62 OFFSET: 2.02
C157	1.57	90°00'00"	1.00	1.000	2712864.872 2712863.574	1068179.088 1068178.526	200+87.61 OFFSET: 1.98	200+88.61 OFFSET: 2.98
C158	1.57	90°00'00"	1.00	1.000	2712865.782 2712866.344	1068184.105 1068182.807	200+87.62 OFFSET: 2.02	200+88.63 OFFSET: 3.02
C159	1.56	4°28'43"	20.00	0.782	2712862.610 2712864.084	1068185.295 1068184.777	200+90.45 OFFSET: 3.01	200+92.01 OFFSET: 2.95
C160	5.87	168°05'18"	2.00	19.171	2712852.585 2712854.143	1068184.241 1068187.901	201+00.93 OFFSET: 1.75	201+00.84 OFFSET: 2.23
C161	6.46	92°32'46"	4.00	4.182	2712823.036 2712820.919	1068166.727 1068172.107	201+21.90 OFFSET: 28.97	201+25.85 OFFSET: 24.75
C162	9.19	87°45'47"	6.00	5.770	2712825.022 2712821.004	1068212.584 1068219.867	201+37.04 OFFSET: 14.36	201+43.47 OFFSET: 19.64
C163	8.07	92°26'35"	5.00	5.218	2712797.492 2712791.177	1068226.568 1068223.067	201+67.79 OFFSET: 17.15	201+72.33 OFFSET: 11.56
C164	7.81	89°32'40"	5.00	4.960	2712784.248 2712780.940	1068225.213 1068231.430	201+79.41 OFFSET: 11.05	201+84.55 OFFSET: 15.71
C165	7.91	90°36'00"	5.00	5.053	2712760.287 2712754.004	1068237.985 1068234.661	202+05.56 OFFSET: 15.18	202+10.45 OFFSET: 10.12
C166	28.93	6°37'53"	250.00	14.483	2712753.869 2712780.778	1068212.845 1068202.254	201+74.38 OFFSET: 11.62	202+03.95 OFFSET: 10.71
C167	3.14	90°00'00"	2.00	2.000	2712939.876 2712941.471	1068267.545 1068265.209	116+55.78 OFFSET: 18.00	116+57.78 OFFSET: 20.00

CURVE TABLE

CURVE #	LENGTH	DELTA	RADIUS	TANGENT	NORTHING	EASTING	PC STATION & OFFSET	PT STATION & OFFSET
C168	3.15	90°08'07"	2.00	2.005	2712946.662 2712944.326	1068292.729 1068291.129	116+82.11 OFFSET: 19.94	116+84.16 OFFSET: 17.90
C169	37.32	8°33'09"	250.00	18.693	2712950.689 2712946.527	1068329.054 1068292.005	116+83.39 OFFSET: 17.91	117+22.12 OFFSET: 18.51
C170	28.56	0°54'16"	1809.50	14.281	2712950.689 2712951.977	1068329.054 1068357.585	117+22.12 OFFSET: 18.51	117+51.82 OFFSET: 18.88
C171	3.13	89°46'26"	2.00	1.992	2712950.988 2712952.916	1068396.499 1068394.437	117+88.42 OFFSET: 18.77	117+90.34 OFFSET: 20.79
C172	63.54	7°09'35"	508.50	31.813	2712988.817 2712982.913	1068350.219 1068286.993	116+84.47 OFFSET: 18.80	117+45.70 OFFSET: 18.19
C173	2.88	82°22'54"	2.00	1.750	2712984.320 2712982.913	1068284.766 1068286.993	116+82.59 OFFSET: 20.50	116+84.47 OFFSET: 18.80
C174	47.01	89°47'04"	30.00	29.887	2712989.815 2713020.607	1068382.788 1068411.859	117+78.08 OFFSET: 18.52	118+09.97 OFFSET: 47.85
C175	50.05	95°35'08"	30.00	33.077	2713024.969 2712995.687	1068427.335 1068460.768	118+26.80 OFFSET: 50.97	118+58.18 OFFSET: 18.17
C176	3.11	89°09'14"	2.00	1.971	2712954.961 2712952.810	1068426.586 1068424.782	118+17.96 OFFSET: 20.74	118+19.89 OFFSET: 18.72
C177	95.31	10°48'47"	505.00	47.795	2712952.672 2712962.167	1068381.291 1068475.981	117+75.57 OFFSET: 18.57	118+68.67 OFFSET: 17.10
C178	51.66	2°43'55"	1083.35	25.833	2712972.649 2712962.167	1068526.558 1068475.981	118+68.67 OFFSET: 17.10	119+19.61 OFFSET: 15.43
C179	3.10	88°46'48"	2.00	1.958	2712965.238 2712963.158	1067790.768 1067792.640	111+80.59 OFFSET: 26.85	111+82.59 OFFSET: 28.85
C180	3.14	90°00'00"	2.00	2.000	2712960.750 2712962.619	1067830.634 1067832.757	112+20.66 OFFSET: 28.85	112+22.66 OFFSET: 26.85
C181	3.19	91°17'59"	2.00	2.046	2712824.010 2712826.706	1068178.797 1068179.754	201+23.31 OFFSET: 15.51	201+25.46 OFFSET: 17.40
C182	3.10	88°41'51"	2.00	1.955	2712796.163 2712797.099	1068194.717 1068192.082	201+55.37 OFFSET: 15.03	201+57.22 OFFSET: 12.93
C183	56.55	180°00'00"	18.00	INFINITY	2712931.831 2712966.725	1068159.966 1068151.111	400+03.63 OFFSET: 10.00	400+03.63 OFFSET: 10.00
C184	11.42	21°48'51"	30.00	5.781	2713117.293 2713126.727	1067075.583 1067069.267	104+30.17 OFFSET: 34.86	104+43.31 OFFSET: 41.22
C185	23.72	2°43'05"	500.00	11.861	2712952.672 2712951.977	1068381.291 1068357.585	117+51.82 OFFSET: 18.88	117+75.57 OFFSET: 18.57
C186	3.26	91°56'17"	2.03	2.102	2713145.523 2713144.371	1067046.713 1067044.028	104+01.46 OFFSET: 25.99	104+03.40 OFFSET: 23.97
C187	2.50	71°33'21"	2.00	1.441	2713138.976 2713136.727	1067042.081 1067042.723	104+01.54 OFFSET: 31.72	104+02.79 OFFSET: 33.60
C188	5.69	108°13'13"	3.01	4.161	2713144.594 2713145.827	1067033.243 1067037.963	103+92.21 OFFSET: 29.75	103+95.78 OFFSET: 26.83
C189	3.55	101°35'00"	2.00	2.452	2713145.827 2713148.485	1067037.963 1067036.369	103+95.77 OFFSET: 26.77	103+93.50 OFFSET: 24.96
C190	2.46	140°52'09"	1.00	2.814	2713148.898 2713147.125	1067030.817 1067030.178	103+88.74 OFFSET: 28.61	103+88.64 OFFSET: 26.72

606596_HD(CTG).DWG Plotted on 30-Mar-2018 1:57 PM

CHATHAM
MAIN STREET (ROUTE 28) FROM GEORGE RYDER ROAD TO BARN HILL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	34	109
	PROJECT FILE NO.	606596	

TRAFFIC SIGNS & PAVEMENT MARKINGS

N
LIMIT OF PAVING STA 303+50
PI +41.60
MATCH EXISTING PAVEMENT MARKINGS
PT +83.60
RET "THICKLY SETTLED"
RET W13-1P
1970 TOWN LAYOUT
GEORGE RYDER ROAD PUBLIC - 40' WIDE
DYCL
PC +74.90 DDYCL
W2-6
15 M.P.H.
W13-1P
SD-1
RIGHT-TURN TRUCKS
SD-2
W11-2
W16-7PL
R4-7
SHARE THE ROAD
W16-1P
Hardings Beach
Harwich
D1-2bA*
George Ryder Rd
D3-1
R&D D3-1
R6-4
N/F NEW CREEK II LLC MAP 8E, LOT 52-27A BK.25979, PG.95
MAIN STREET STA 104+77.54= GEORGE RYDER ROAD STA 300+00 N 2713136.681 E 1067121.721
N/F THE SUMNER G. N. HARDING TRUST OF 1997 THE JEAN C. HARDING TRUST OF 1997 MAP 8E, LOT 53-27 BK.11030, PG.34
Harwich
Rail Trail
D1-2bB*
Rail Trail
Hardings Beach
D1-2bC*
CONTINUED ON SHEET NO. 35
DO NOT BLOCK DRIVEWAY
R10-7a
YIELD
R1-2
R&R
1927 STATE HIGHWAY LAYOUT (NO. 2414)
PCC +11.80
N/F RONALD C. MESERVEY MAP 8E, LOT 37-15 BK.2631, PG.28
N/F DANIEL K. & SHARON F. MESERVEY MAP 8E, LOT 39-16 BK.10738, PG.86
HESS GAS STATION 1 STORY WOOD #1698
GAS PUMP OVERHANG
6' STOCKADE FENCE
PT +79.57
CW
SWEL
SYEL
SWGL
YL
DWLEX
PC +32.57
300+00
PRC +97.87
R&D R1-1
MAIN STREET STA 103+69.71= GEORGE RYDER ROAD SOUTH STA 600+00 N 2713181.392 E 1067024.360
PRC +24.48
PCC +76.31
501+75.92
LIMIT OF WORK STA 100+76.61 N 2713372.902 E 1066802.783
MAIN STREET PUBLIC - 60' WIDE
PI +70.37
PC +22.66
SYGL
100+00
MATCH EXISTING PAVEMENT MARKINGS
R&D D3-2
Market Place
D3-2
R&D W11-2
D11-1a
M6-2
BIKE ROUTE
D11-1
M6-1
N/F JKM PROPERTY THREE LLC MAP 8E, LOT 1J-C72 LCC# 28422-I, CERT# 208889
DO NOT BLOCK INTERSECTION
R10-7
6" - SWLL
4" - SWLL
George Ryder Rd So
D3-3
N/F JKM PROPERTY FOUR LLC MAP 8E, LOT 1K-C73 LCC# 28422-I, CERT# 208888
MAY USE FULL LANE
R4-11
1 STORY WOOD #1715
1 STORY WOOD #1705
N/F JKM PROPERTY FOUR LLC MAP 8E, LOT 1H-C71 LCC# 28422-I, CERT#208887
GEORGE RYDER ROAD SOUTH PRIVATE - 33' WIDE
SL
R&D D3-3
R&D R1-1
STOP
R1-1
Main St
D3-6
N/F JKM PROPERTY THREE, LLC MAP 8D, LOT 53A-6A BK. 29489, PG. 67
1 STORY BRICK #1671
N/F FM NOMINEE REALTY TRUST MAP 8D, LOT 48A-R42 BK.11513, PG.285
LIMIT OF WORK STA 601+38.55 N 2713080.360 E 1066929.985
0 20 50 100
SCALE: 1" = 20'

NOTE:
* SIGNS LOCATED WITHIN THE BICYCLE OPERATING SPACE, SHALL BE MOUNTED AT MINIMUM HEIGHT OF 8'4" PER THE AASHTO GUIDE TO BIKE FACILITIES, 4TH EDITION.

CHATHAM
MAIN STREET (ROUTE 28) FROM
GEORGE RYDER ROAD TO BARN HILL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	35	109
PROJECT FILE NO.	606596		

TRAFFIC SIGNS & PAVEMENT MARKINGS

606596_TR(PAVEMRK).DWG   Plotted on 30-Mar-2018 1:57 PM

CHATHAM
MAIN STREET (ROUTE 28) FROM GEORGE RYDER ROAD TO BARN HILL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	36	109
	PROJECT FILE NO.	606596	

TRAFFIC SIGNS & PAVEMENT MARKINGS

Plotted on 30-Mar-2018 1:58 PM

606596_TR(PAVEMRK).DWG

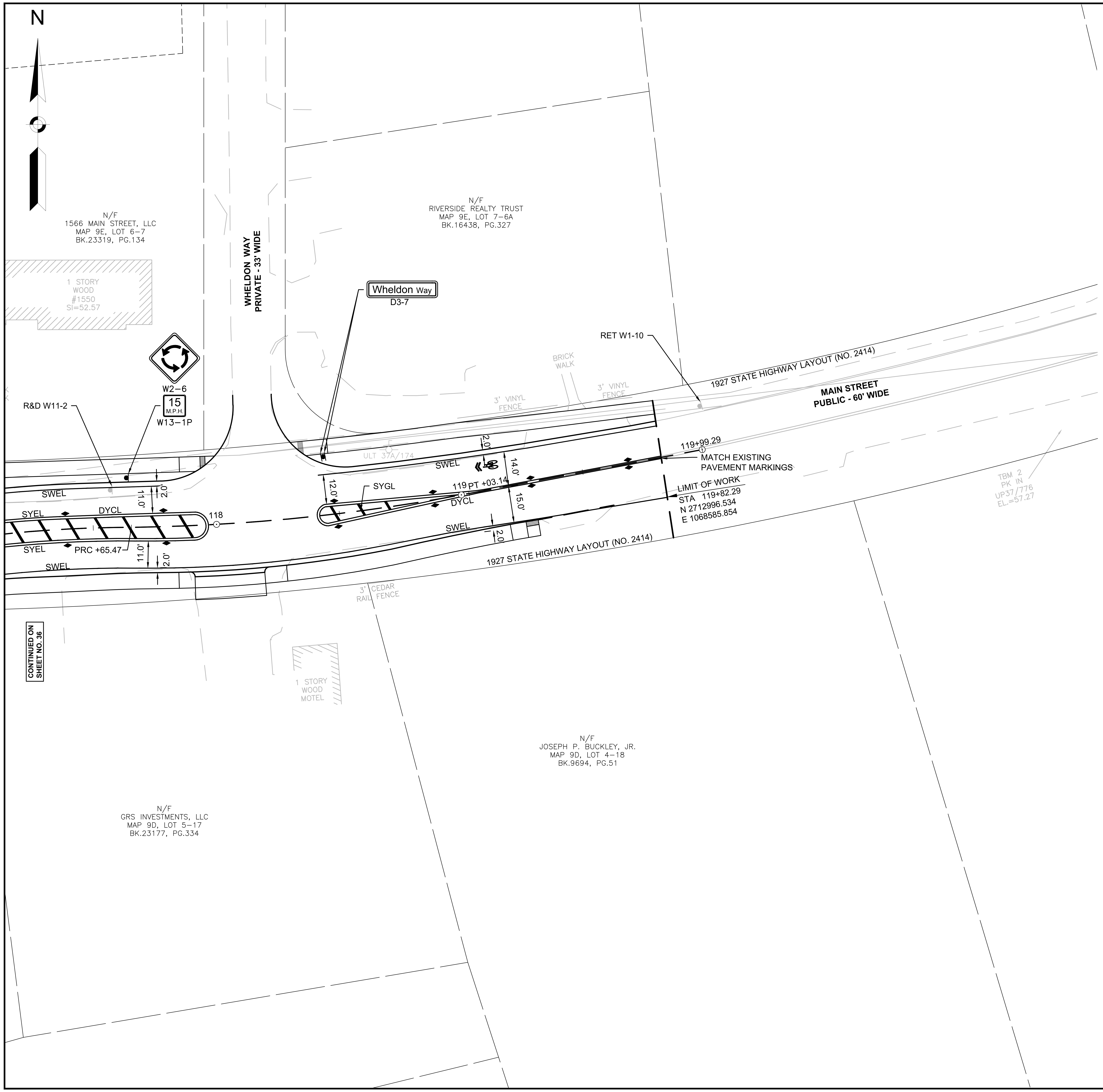
N
N/F TOWN OF CHATHAM MAP 9E, LOT 2-10 BK.15361, PG.181
N/F TOWN OF CHATHAM MAP 9E, LOT 3-9 BK.18912, PG.179
N/F TOWN OF CHATHAM MAP 9E, LOT 3B-9B BK.18912, PG.179
N/F CAPE COD COMMERCIAL HOOK FISHERMAN'S ASSOCIATION, INC. MAP 9E, LOT 5-8 BK.24712, PG.341
N/F 1566 MAIN STREET, LLC MAP 9E, LOT 6-7 BK.23319, PG.134
DWTN Chatham
Hardings Beach
D1-2bD*
Harwich
Rail Trail
DWTN Chatham
D1-3bA
Harwich
Rail Trail
Hardings Beach
D1-3bB
BIKE PATH
R3-17
ENDS
R3-17BP
W11-2
W16-7PL
R&D "CENTER LANE LEFT TURN ONLY"
R4-7
R&D W2-2L
R&D W11-2a
R6-4
YIELD
R1-2
Main St
D3-6
TBM 3 CONC. BND W/DH=50.00
1 STORY WOOD #1550 SI=52.57
Wheldon Way
D3-7
WHELDON WAY PRIVATE - 33' WIDE
R&D W11-2
DO NOT BLOCK DRIVEWAY
R10-7a
BRICK WALK
1927 STATE HIGHWAY LAYOUT (NO. 2414)
MAIN STREET PUBLIC - 60' WIDE
SWEL
DYCL
SYGL
SYEL
DWLEx
YL
CW
PI +98.78
PI +14.94
PC +51.32
PRC +38.51
200+00
400+00
401
PT +89.54
PC +74.05
PRC +65.47
112
113
114
115
117
118
11.0'
5.0'
2.0'
19.0'
21.0'
12.0'
5.5'
CONTINUED ON SHEET NO. 35
CONTINUED ON SHEET NO. 37
15 M.P.H.
W2-6
W13-1P
MAY USE FULL LANE
R4-11
R&D "CENTER LANE LEFT TURN ONLY"
OLLIE'S RESTAURANT 2 STORY WOOD #1603
LARRY'S PX RESTAURANT 1 STORY WOOD #1579-1595
R&D M1-5
R&D R1-1
R&D R4-7
BRICK WALK
BIKE ROUTE
D11-1
M6-1
DUNKIN DONUTS 2 STORY WOOD #595
HARDINGS BEACH
R&R
MAIN STREET STA 115+47.82 = BARN HILL ROAD STA 200+00.00 N 2712949.277 E 1068155.539
Barn Hill Rd
D3-5
PC +47.42
PT +61.14
R&D W3-1
1958 TOWN LAYOUT
BARN HILL ROAD PUBLIC - 40' WIDE
PC +71.14
PT +09.17
201
202
MATCH EXISTING PAVEMENT MARKINGS
LIMIT OF WORK STA. 202+43.67 N 2712719.044 E 1068235.010
N/F BARN HILL PROPERTIES, INC MAP 9D, LOT 44-12A BK.20908, PG.180
N/F BARN HILL PROPERTIES, INC MAP 9D, LOT 43-12 BK.21678, PG.163
N/F GRS INVESTMENTS, LLC MAP 9D, LOT 6-16 BK.23177, PG.334
N/F GRS INVESTMENTS, LLC MAP 9D, LOT 5-17 BK.23177, PG.334
0
20
50
100
SCALE: 1" = 20'

NOTE:
* SIGNS LOCATED WITHIN THE BICYCLE OPERATING SPACE, SHALL BE MOUNTED AT MINIMUM HEIGHT OF 8'4" PER THE AASHTO GUIDE TO BIKE FACILITIES, 4TH EDITION.

CHATHAM
MAIN STREET (ROUTE 28) FROM GEORGE RYDER ROAD TO BARN HILL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	37	109
	PROJECT FILE NO.	606596	

TRAFFIC SIGNS & PAVEMENT MARKINGS



CONTINUED ON SHEET NO. 36

0 20 50 100
SCALE: 1" = 20'

606596_TR(PAVEMRK).DWG Plotted on 30-Mar-2018 1:58 PM

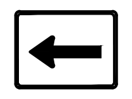
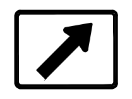
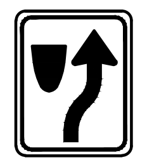
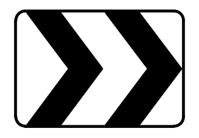
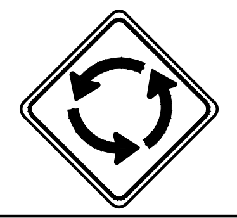
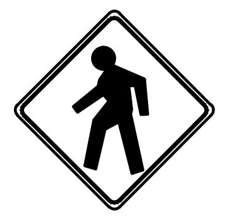
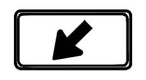
CHATHAM
MAIN STREET (ROUTE 28) FROM
GEORGE RYDER ROAD TO BARN HILL ROAD

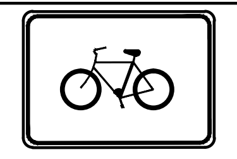
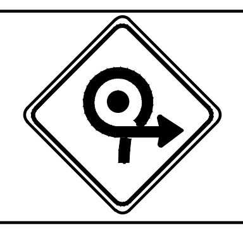
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	38	109
PROJECT FILE NO.	606596		

TRAFFIC SIGN SUMMARY SHEET

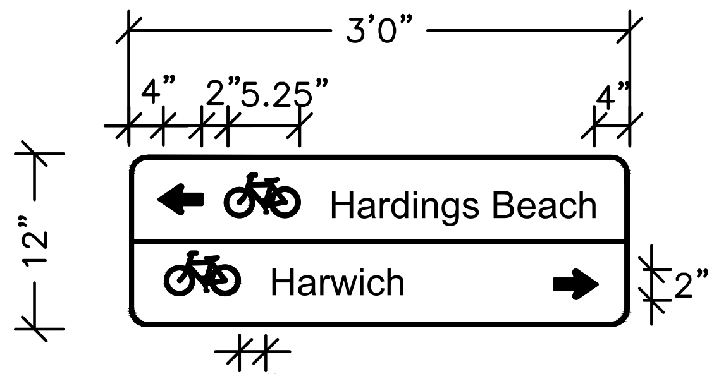
Plotted on 30-Mar-2018 1:58 PM
606596_TR(SIGN SUMMARY).DWG

TRAFFIC SIGN SUMMARY

IDENTIFICATION NUMBER	SIZE OF SIGN		TEXT	TEXT DIMENSIONS (INCHES)			NUMBER OF SIGNS REQUIRED	COLOR			POST SIZE AND NUMBER REQUIRED	UNIT AREA (S.F.)	AREA IN SQUARE FEET
	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MKR.		BACK-GROUND	LEGEND	BORDER			
M6-1	12	9		①	①	①	2	GREEN	WHITE	WHITE	P5 (0)	0.75	1.50
M6-2	12	9					1	GREEN	WHITE	WHITE	P5 (0)	0.75	0.75
R1-1	30	30	STOP				2	RED	WHITE	WHITE	P5 (2)	6.25	12.50
R1-2	36	36	YIELD				6	WHITE	RED	RED	P5 (6)	4.50	27.00
R3-17	24	18	BIKE PATH				1	BLACK & WHITE	BLACK & WHITE	BLACK	P5 (1)	3.00	3.00
R3-17BP	24	8	ENDS				1	WHITE	BLACK	BLACK	P5 (0)	1.33	1.33
R4-7	24	30					5	WHITE	BLACK	BLACK	P5 (5)	5.00	25.00
R4-11	30	30	MAY USE FULL LANE				4	WHITE	BLACK	BLACK	P5 (4)	6.25	25.00
R6-4	30	24					6	WHITE	BLACK	BLACK	P5 (6)	5.00	30.00
R10-7	24	30	DO NOT BLOCK INTERSECTION	4"	4.5"		1	WHITE	BLACK	BLACK	P5 (1)	5.00	5.00
R10-7A	24	30	DO NOT BLOCK DRIVEWAY	①	①		2	WHITE	BLACK	BLACK	P5 (2)	5.00	10.00
W2-6	30	30					6	YELLOW	BLACK	BLACK	P5 (6)	6.25	37.50
W11-2	30	30					14	YELLOW	BLACK	BLACK	P5 (13)	6.25	87.50
W13-1P	18	18	15 M.P.H.				6	YELLOW	BLACK	BLACK	P5 (0)	2.25	13.50
W16-1P	18	24	SHARE THE ROAD				2	YELLOW	BLACK	BLACK	P5 (2)	3.00	6.00
W16-7PL	24	12					14	YELLOW	BLACK	BLACK	P5 (0)	2.00	28.00

IDENTIFICATION NUMBER	SIZE OF SIGN		TEXT	TEXT DIMENSIONS (INCHES)			NUMBER OF SIGNS REQUIRED	COLOR			POST SIZE AND NUMBER REQUIRED	UNIT AREA (S.F.)	AREA IN SQUARE FEET
	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MKR.		BACK-GROUND	LEGEND	BORDER			
D3-1	60	12	George Ryder Rd	6" - 4.5"	①	①	2	GREEN	WHITE	WHITE	P5 (1)	5.00	10.00
D3-2	54	12	Market Place	6" - 4.5"			2	GREEN	WHITE	WHITE	P5 (1)	4.50	9.00
D3-3	66	12	George Ryder Rd So	6" - 4.5"			2	GREEN	WHITE	WHITE	P5 (1)	5.50	11.00
D3-4	54	12	Seaquanset Rd	6" - 4.5"			2	GREEN	WHITE	WHITE	P5 (2)	4.50	9.00
D3-5	42	12	Barn Hill Rd	6" - 4.5"			2	GREEN	WHITE	WHITE	P5 (1)	3.50	7.00
D3-6	30	12	Main St	6" - 4.5"			4	GREEN	WHITE	WHITE	P5 (3)	2.50	10.00
D3-7	48	12	Wheldon Way	6" - 4.5"			2	GREEN	WHITE	WHITE	P5 (1)	4.00	8.00
D11-1	24	18	BIKE ROUTE	①			4	GREEN	WHITE	WHITE	P5 (3)	3.00	12.00
D11-1A	24	18					1	GREEN	WHITE	WHITE	P5 (1)	3.00	3.00
SD-1	30	30					1	YELLOW	BLACK	BLACK	P5 (1)	6.25	6.25
SD-2	24	12	RIGHT-TURN TRUCKS				1	YELLOW	BLACK	BLACK	P5 (0)	2.00	2.00
D1-2BA	36	12	← Hardings Beach Harwich →	2"	4"	3"	1	GREEN	WHITE	WHITE	P5 (1)	3.00	3.00
D1-2BB	36	12	↑ Harwich Rail Trail →	2"	4"	3"	1	GREEN	WHITE	WHITE	P5 (1)	3.00	3.00
D1-2BC	30	12	↰ Rail Trail Hardings Beach →	2"	4"	3"	1	GREEN	WHITE	WHITE	P5 (1)	2.50	2.50
D1-2BD	42	12	↑ DWTN Chatham Hardings Beach →	2"	4"	3"	1	GREEN	WHITE	WHITE	P5 (1)	3.5	3.5
D1-3BA	42	18	← Harwich ← Rail Trail DWTN Chatham →	2"	4"	3"	1	GREEN	WHITE	WHITE	P5 (1)	5..25	5.25
D1-3BB	36	18	↑ Harwich ↑ Rail Trail ← Hardings Beach	2"	4"	3"	1	GREEN	WHITE	WHITE	P5 (1)	4.50	4.50

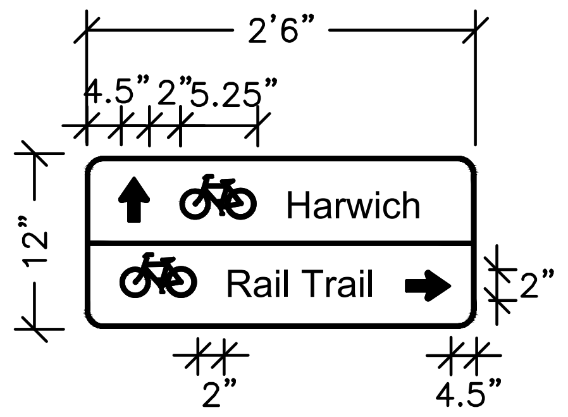
① SEE MUTCD 2009 EDITION, 2004/2012 STD. HWY. SIGNS AND SECTION M9.30.0. TYPE III OF THE MASSDOT STANDARD SPECIFICATION FOR TEXT DIMENSIONS AND COLOR.



BORDER
R=1.5"
TH=0.375"

Panel Style: guide_con_destination.ssi
M.U.T.C.D.: 2009 Edition

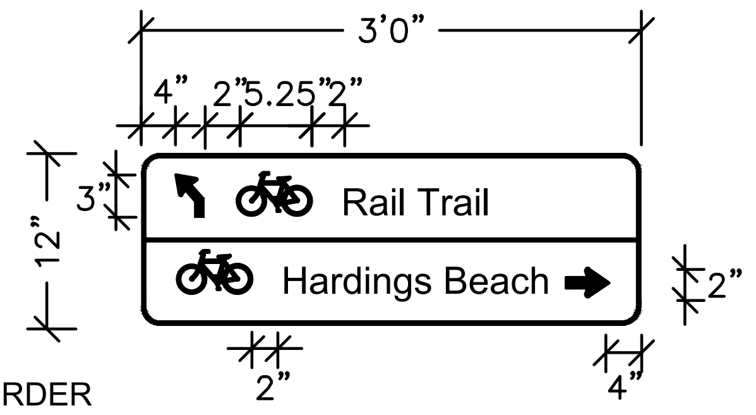
D1-2bA Detail



BORDER
R=1.5"
TH=0.375"

Panel Style: guide_con_destination.ssi
M.U.T.C.D.: 2009 Edition

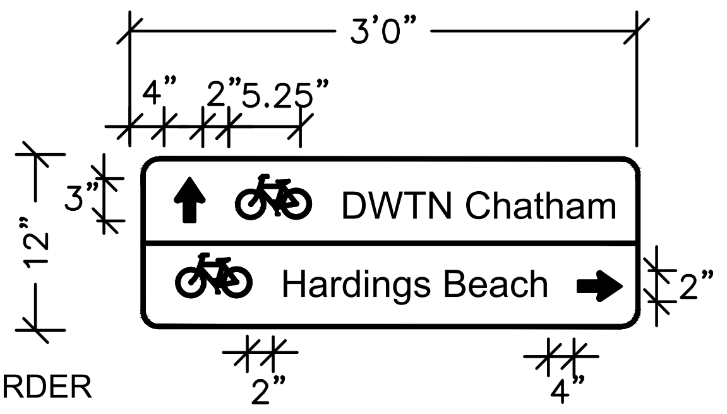
D1-2bB Detail



BORDER
R=1.5"
TH=0.375"

Panel Style: guide_con_destination.ssi
M.U.T.C.D.: 2009 Edition

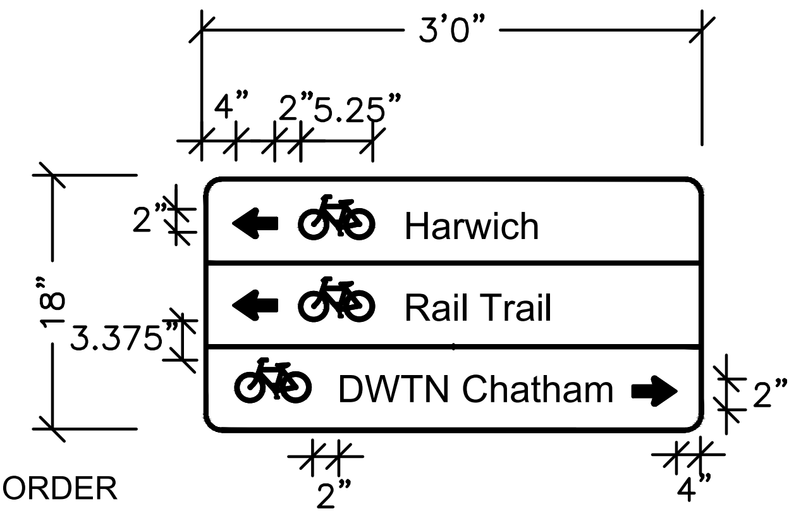
D1-2bC Detail



BORDER
R=1.5"
TH=0.375"

Panel Style: guide_con_destination.ssi
M.U.T.C.D.: 2009 Edition

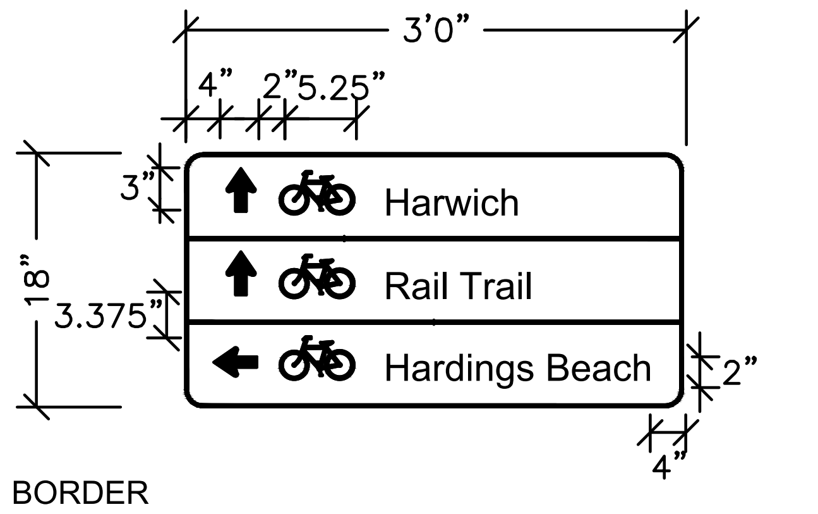
D1-2bD Detail



BORDER
R=1.5"
TH=0.375"

Panel Style: guide_con_destination.ssi
M.U.T.C.D.: 2009 Edition

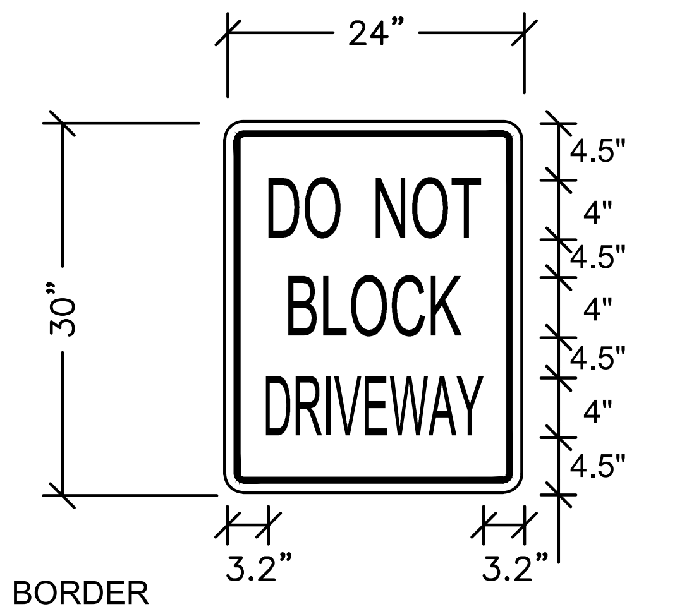
D1-3bA Detail



BORDER
R=1.5"
TH=0.375"

Panel Style: guide_con_destination.ssi
M.U.T.C.D.: 2009 Edition

D1-3bB Detail



BORDER
R=3.0"
TH=0.5"
IN=0.5"

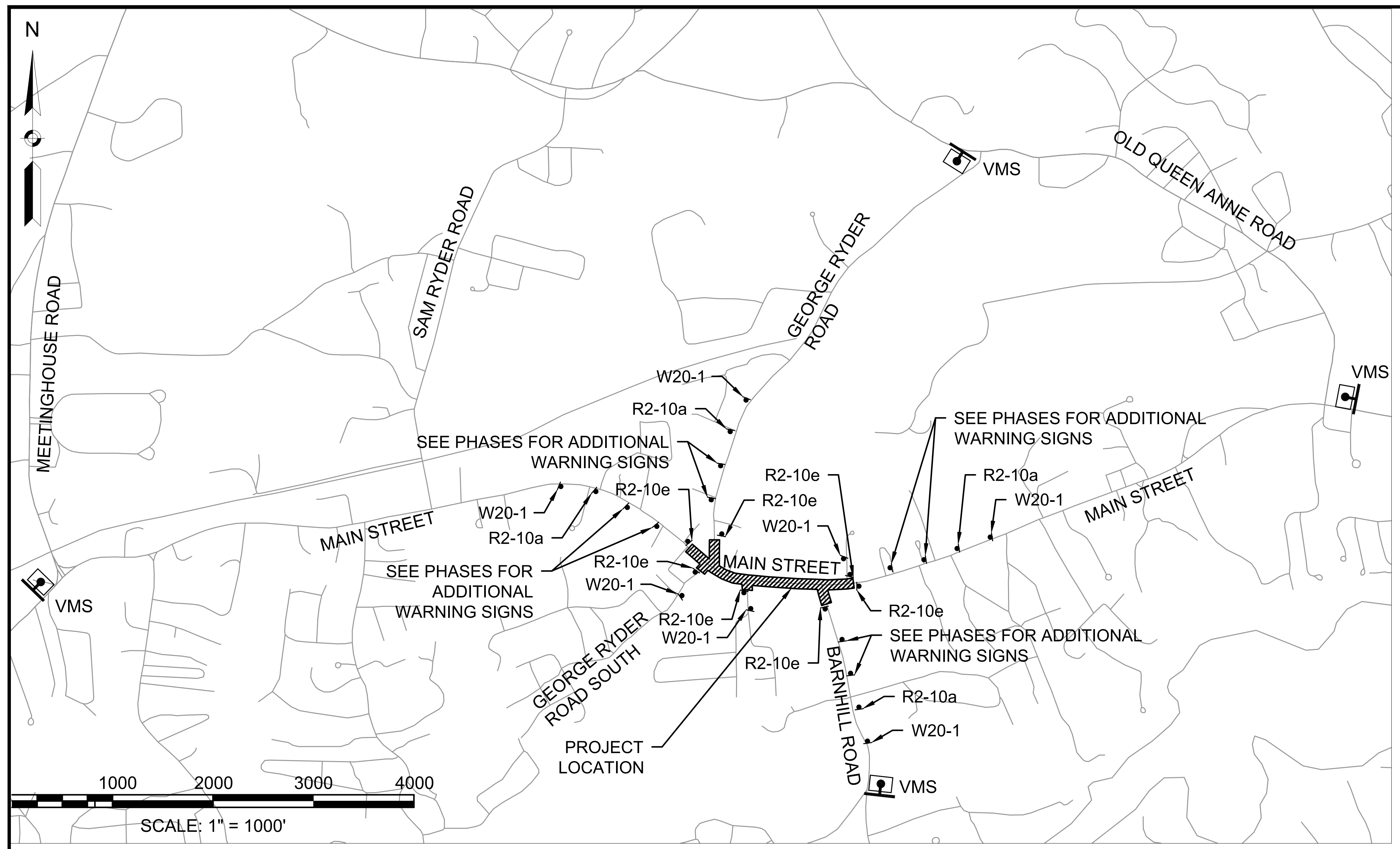
Panel Style: regulatory_con_ground.ssi
M.U.T.C.D.: 2009 Edition

R10-7a Detail

CHATHAM
MAIN STREET (ROUTE 28) FROM GEORGE RYDER ROAD TO BARN HILL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	39	109
PROJECT FILE NO.	606596		

TEMPORARY TRAFFIC CONTROL PLANS



ADVANCE WARNING SIGN LOCATIONS

VMS SCHEDULE

DURATION	PANEL 1	PANEL 2
PRIOR TO PHASE I STAGE I	ROAD WORK	BEGINS XX/XX
PRIOR TO PHASE II STAGE V & PHASE III STAGE V	TRAFFIC PATTERN CHANGES	XX/XX

NOTE: VMS SIGNS ARE TO BE USED 2 WEEKS PRIOR TO THE START OF CONSTRUCTION AND PRIOR TO ANY MAJOR CHANGES IN TRAFFIC PATTERNS.

SUGGESTED ADVANCE WARNING SIGN MINIMUM SPACING

ROAD TYPE	DISTANCE BETWEEN SIGNS		
	A	B	C
LOCAL OR LOW VOLUME ROADWAY	350 FEET	350 FEET	350 FEET
MOST OTHER ROADWAYS	500 FEET	500 FEET	500 FEET
EXPRESSWAY/FREEWAY	1,000 FEET	1,500 FEET	2,640 FEET

BASED ON: TABLE 6C-1 MUTCD LATEST EDITION

TAPER LENGTH CRITERIA FOR TEMPORARY TRAFFIC CONTROL ZONES

TYPE OF TAPER	TAPER LENGTH
MERGING TAPER	AT LEAST L
SHIFTING TAPER	AT LEAST 0.5L
SHOULDER TAPER	AT LEAST 0.33L
ONE-LANE, TWO-WAY TRAFFIC TAPER	50 FEET MINIMUM, 100 FEET MAXIMUM
DOWNSTREAM TAPER	50 FEET MINIMUM, 100 FEET MAXIMUM

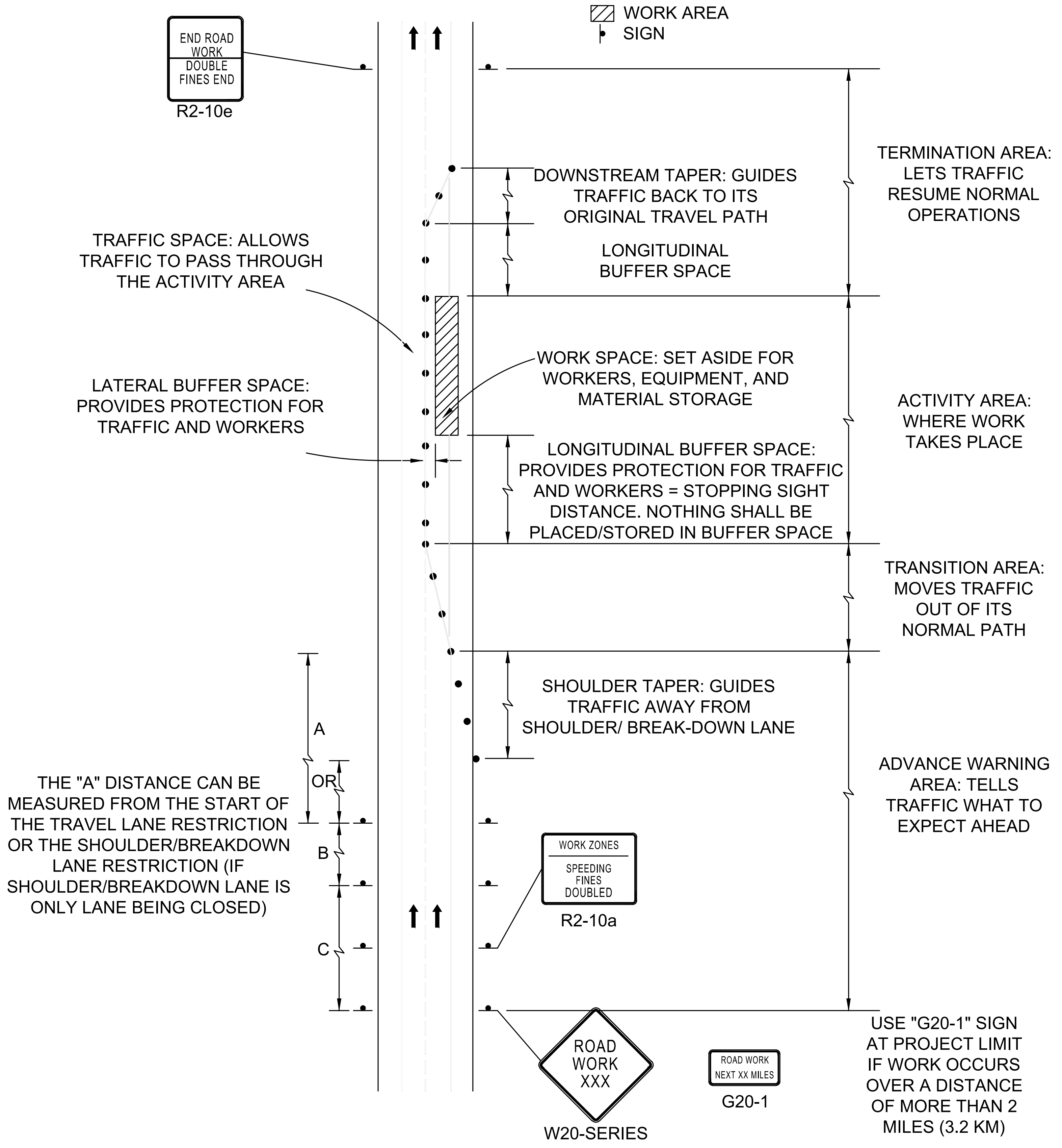
NOTE: USE TABLE 6C-4 SHOWN BELOW TO CALCULATE L
SOURCE: TABLE 6C-3 2009 MUTCD

BUFFER SPACE TABLE

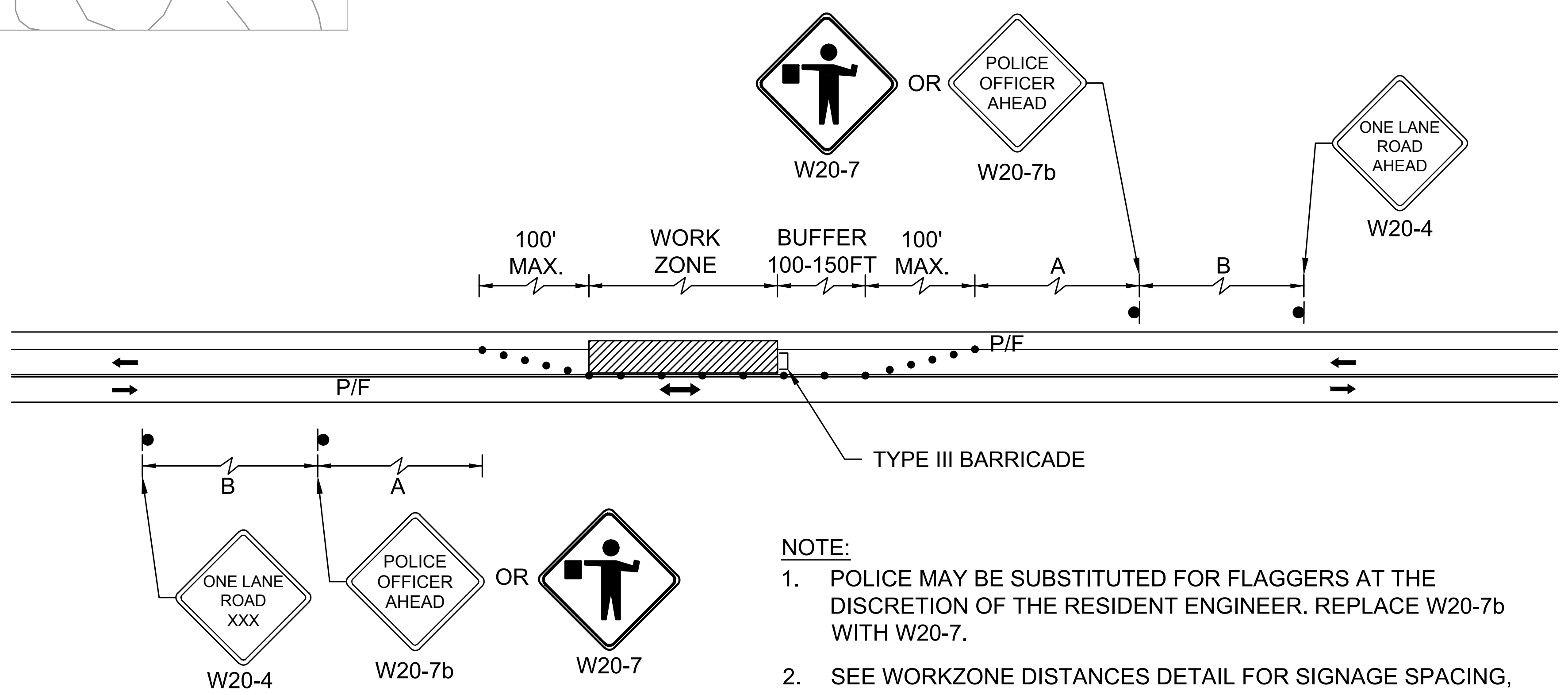
POSTED SPEED (MPH)	LENGTH (FT)
20	115
25	155
30	200
35	250
40	305
45	250
50	250
55	495
60	570
65	645
70	730
75	820

SOURCE: TABLE 6C-2 2009 MUTCD

LEGEND
- ↑ DIRECTION OF TRAVEL
- • CHANNELIZING DEVICE
- ▨ WORK AREA
- ╻ SIGN

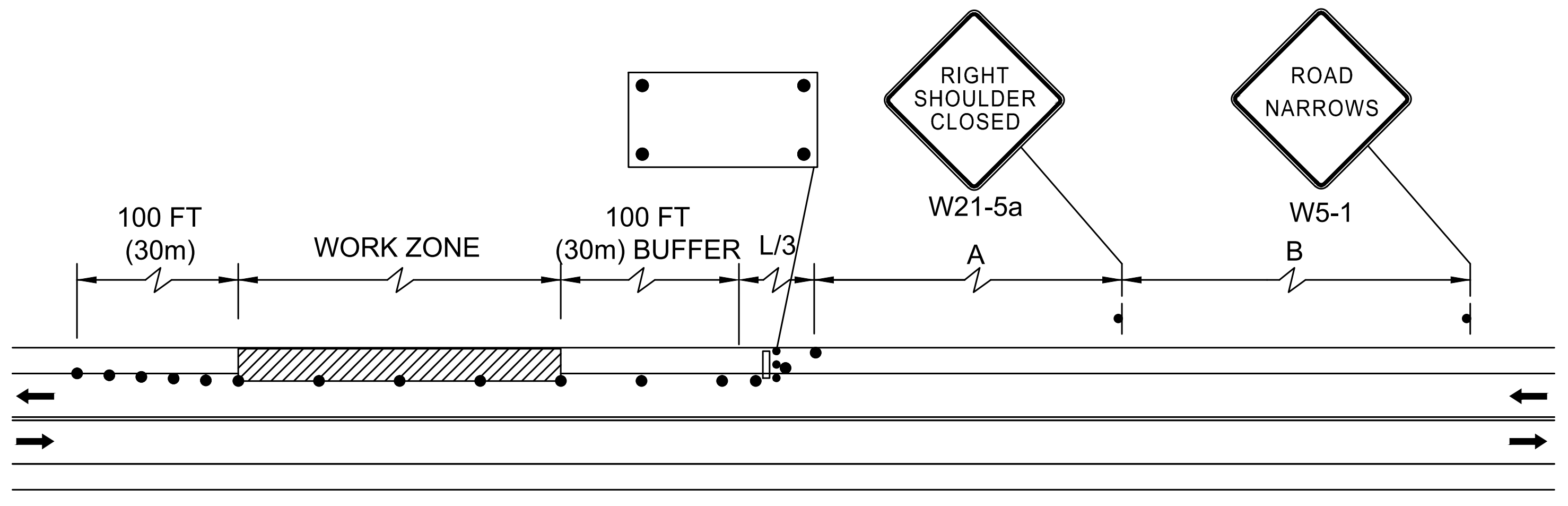

END ROAD WORK DOUBLE FINES END
R2-10e
TRAFFIC SPACE: ALLOWS TRAFFIC TO PASS THROUGH THE ACTIVITY AREA
LATERAL BUFFER SPACE: PROVIDES PROTECTION FOR TRAFFIC AND WORKERS
DOWNSTREAM TAPER: GUIDES TRAFFIC BACK TO ITS ORIGINAL TRAVEL PATH
LONGITUDINAL BUFFER SPACE
WORK SPACE: SET ASIDE FOR WORKERS, EQUIPMENT, AND MATERIAL STORAGE
LONGITUDINAL BUFFER SPACE: PROVIDES PROTECTION FOR TRAFFIC AND WORKERS = STOPPING SIGHT DISTANCE. NOTHING SHALL BE PLACED/STORED IN BUFFER SPACE
SHOULDER TAPER: GUIDES TRAFFIC AWAY FROM SHOULDER/ BREAK-DOWN LANE
TERMINATION AREA: LETS TRAFFIC RESUME NORMAL OPERATIONS
ACTIVITY AREA: WHERE WORK TAKES PLACE
TRANSITION AREA: MOVES TRAFFIC OUT OF ITS NORMAL PATH
ADVANCE WARNING AREA: TELLS TRAFFIC WHAT TO EXPECT AHEAD
A
OR
B
C
THE "A" DISTANCE CAN BE MEASURED FROM THE START OF THE TRAVEL LANE RESTRICTION OR THE SHOULDER/BREAKDOWN LANE RESTRICTION (IF SHOULDER/BREAKDOWN LANE IS ONLY LANE BEING CLOSED)
WORK ZONES SPEEDING FINES DOUBLED
R2-10a
ROAD WORK XXX
W20-SERIES
ROAD WORK NEXT XX MILES
G20-1
USE "G20-1" SIGN AT PROJECT LIMIT IF WORK OCCURS OVER A DISTANCE OF MORE THAN 2 MILES (3.2 KM)

COMPONENT PARTS OF A TEMPORARY TRAFFIC CONTROL (TTC) ZONE
(FIGURE GEN-4)
NOT TO SCALE



NOTE:
1. POLICE MAY BE SUBSTITUTED FOR FLAGGERS AT THE DISCRETION OF THE RESIDENT ENGINEER. REPLACE W20-7b WITH W20-7.
2. SEE WORKZONE DISTANCES DETAIL FOR SIGNAGE SPACING, TAPER LENGTHS, AND BUFFER SPACE LENGTHS.
3. USE A MINIMUM LANE WIDTH OF 11 FEET.

TWO LANE ROAD ONE LANE ALTERNATING TRAFFIC WITH FLAGGERS DETAIL
(FIGURE TLR-5)
NOT TO SCALE



NOTE:
1. SEE WORKZONE DISTANCES DETAIL FOR SIGNAGE SPACING, TAPER LENGTHS, AND BUFFER SPACE LENGTHS.
2. USE A MINIMUM LANE WIDTH OF 11 FEET.

TWO LANE ROAD SHOULDER CLOSED
(FIGURE TLR-1)
NOT TO SCALE

FORMULAS FOR DETERMINING TAPER LENGTHS

SPEED LIMIT (S)	TAPER LENGTH L (FT)
40 MPH OR LESS	$L = \frac{WS^2}{60}$
45 MPH OR MORE	$L = WS$

SOURCE: TABLE 6C-4 2009 MUTCD

WHERE: L = TAPER LENGTH IN FEET
W = WIDTH OF OFFSET IN FEET
S = POSTED SPEED LIMIT, OR OFF-PEAK 85TH-PERCENTILE SPEED PRIOR TO WORK STARTING, OR THE ANTICIPATED OPERATING SPEED IN MPH

WORKZONE DISTANCES

NOTES:

1. ALL TEMPORARY TRAFFIC CONTROL WORK SHALL CONFORM TO THE LATEST EDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) AND ALL REVISIONS, UNLESS SUPERCEDED BY THESE PLANS.
2. ALL SIGN LEGENDS, BORDERS, AND MOUNTING SHALL BE IN ACCORDANCE WITH THE MUTCD.
3. TEMPORARY CONSTRUCTION SIGNING AND ALL OTHER TRAFFIC CONTROL DEVICES SHALL BE IN PLACE PRIOR TO THE START OF ANY WORK.
4. TEMPORARY CONSTRUCTION SIGNING, BARRICADES, AND ALL OTHER NECESSARY WORK ZONE TRAFFIC CONTROL DEVICES SHALL BE REMOVED FROM THE HIGHWAY OR COVERED WHEN THEY ARE NOT REQUIRED FOR CONTROL OF TRAFFIC.
5. SIGNS AND SIGN SUPPORTS LOCATED ON OR NEAR THE TRAVELED WAY, CHANNELIZING DEVICES, BARRIERS, AND CRASH ATTENUATORS MUST PASS THE CRITERIA SET FORTH IN NCHRP REPORT 350, "RECOMMENDED PROCEDURES FOR THE SAFETY PERFORMANCE EVALUATION OF HIGHWAY FEATURES" AND/OR "MANUAL FOR ASSESSING SAFETY HARDWARE" (MASH).
6. CONTRACTORS SHALL NOTIFY EACH ABUTTER AT LEAST 24 HOURS IN ADVANCE OF THE START OF ANY WORK THAT WILL REQUIRE THE TEMPORARY CLOSURE OF ACCESS, SUCH AS CONDUIT INSTALLATION, EXISTING PAVEMENT EXCAVATION, TEMPORARY DRIVEWAY PAVEMENT PLACEMENT, AND SIMILAR OPERATIONS.
7. THE FIRST FIVE PLASTIC DRUMS OF A TAPER SHALL BE MOUNTED WITH TYPE A LIGHTS.
8. THE ADVISORY SPEED LIMIT, IF REQUIRED, SHALL BE DETERMINED BY THE ENGINEER.
9. DISTANCES ARE A GUIDE AND MAY BE ADJUSTED IN THE FIELD BY THE ENGINEER.
10. MAXIMUM SPACING OF TRAFFIC DEVICES IN A TAPER (DRUMS OR CONES) IS EQUAL IN FEET TO THE SPEED LIMIT IN MPH.
11. MINIMUM LANE WIDTH IS TO BE 11 FEET (3.3m) UNLESS OTHERWISE SHOWN. MINIMUM LANE WIDTH TO BE MEASURED FROM THE EDGE OF DRUMS OR MEDIAN BARRIER.
12. ALL SIGNS SHALL BE MOUNTED ON THEIR OWN STANDARD SIGN SUPPORTS.

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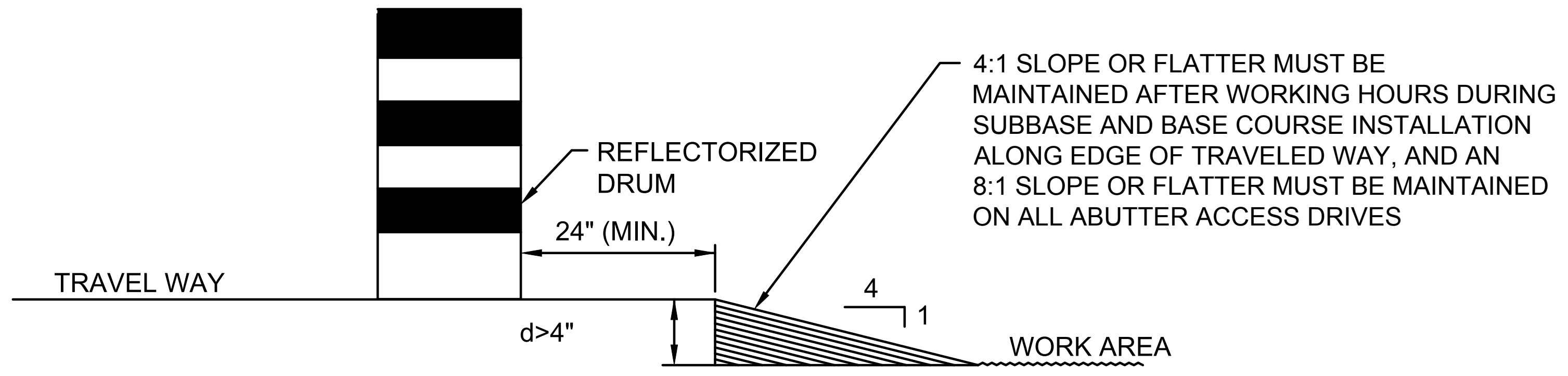
CHATHAM
MAIN STREET (ROUTE 28) FROM
GEORGE RYDER ROAD TO BARN HILL ROAD

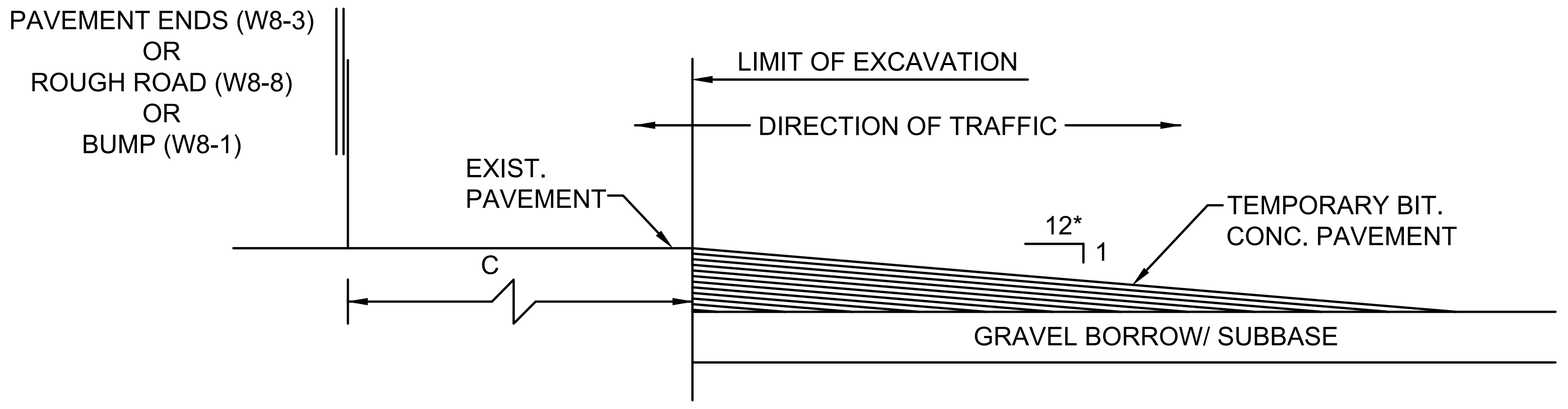
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	40	109
	PROJECT FILE NO.	606596	

TEMPORARY TRAFFIC CONTROL PLANS



REFLECTORIZED DRUM
4:1 SLOPE OR FLATTER MUST BE MAINTAINED AFTER WORKING HOURS DURING SUBBASE AND BASE COURSE INSTALLATION ALONG EDGE OF TRAVELED WAY, AND AN 8:1 SLOPE OR FLATTER MUST BE MAINTAINED ON ALL ABUTTER ACCESS DRIVES
24" (MIN.)
TRAVEL WAY
4
1
d>4"
WORK AREA

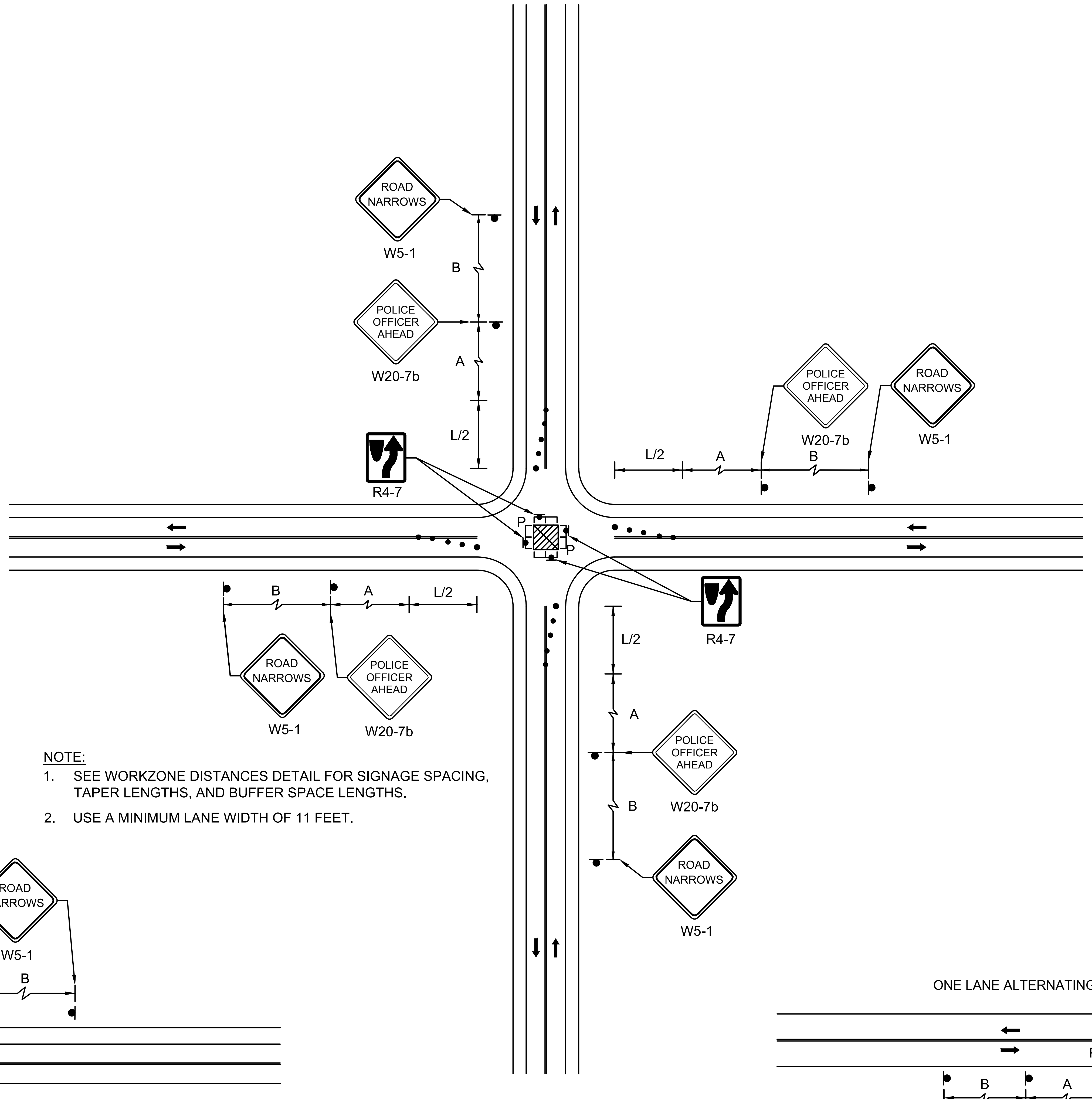
LATERAL DROP-OFF DETAIL
(FIGURE GEN-6)
NOT TO SCALE



PAVEMENT ENDS (W8-3) OR ROUGH ROAD (W8-8) OR BUMP (W8-1)
LIMIT OF EXCAVATION
DIRECTION OF TRAFFIC
EXIST. PAVEMENT
12*
1
TEMPORARY BIT. CONC. PAVEMENT
C
GRAVEL BORROW/ SUBBASE

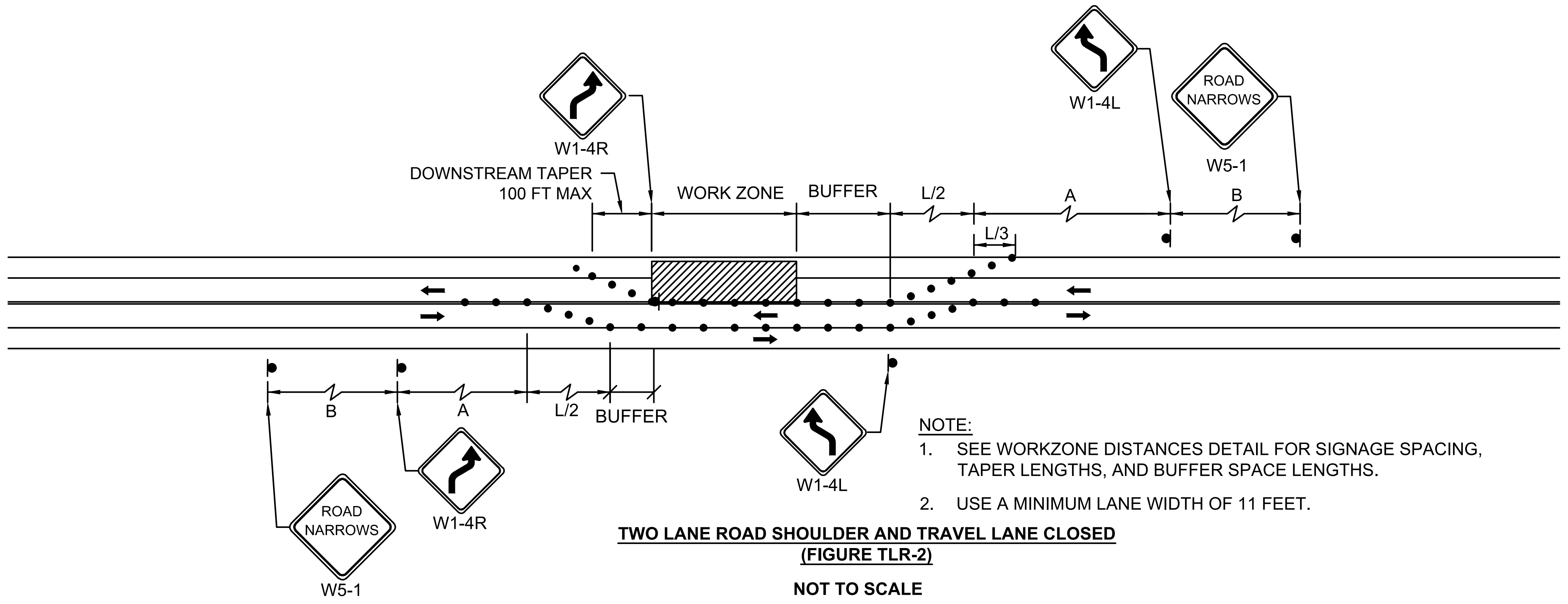
LONGITUDINAL DROP-OFF DETAIL
(FIGURE GEN-6)
NOT TO SCALE

*-INCREASE SLOPE RATIO FOR HIGHER SPEEDS



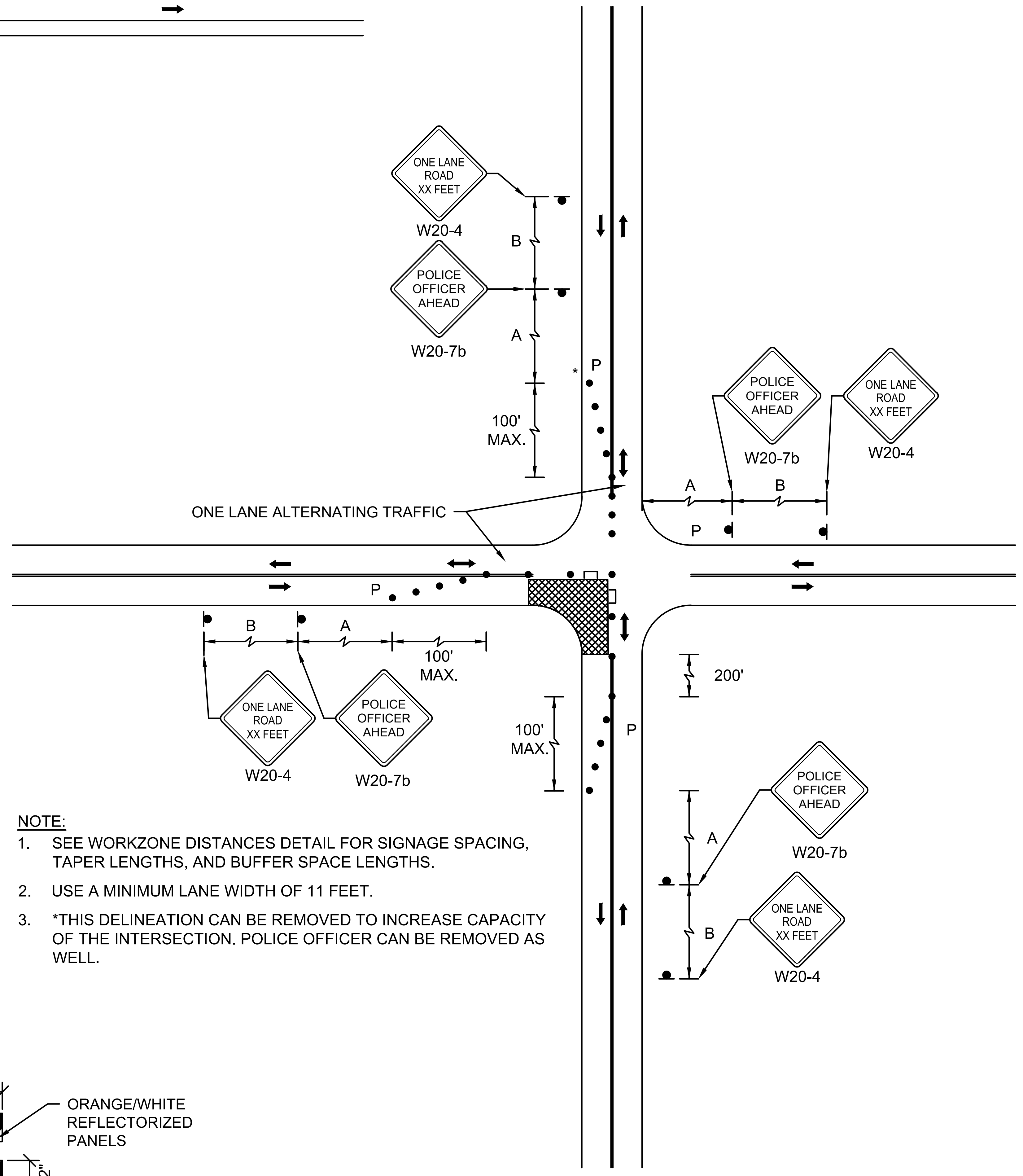
NOTE:
1. SEE WORKZONE DISTANCES DETAIL FOR SIGNAGE SPACING, TAPER LENGTHS, AND BUFFER SPACE LENGTHS.
2. USE A MINIMUM LANE WIDTH OF 11 FEET.

SINGLE LANE APPROACH CENTER CLOSURE
(FIGURE INT-1)
NOT TO SCALE



NOTE:
1. SEE WORKZONE DISTANCES DETAIL FOR SIGNAGE SPACING, TAPER LENGTHS, AND BUFFER SPACE LENGTHS.
2. USE A MINIMUM LANE WIDTH OF 11 FEET.

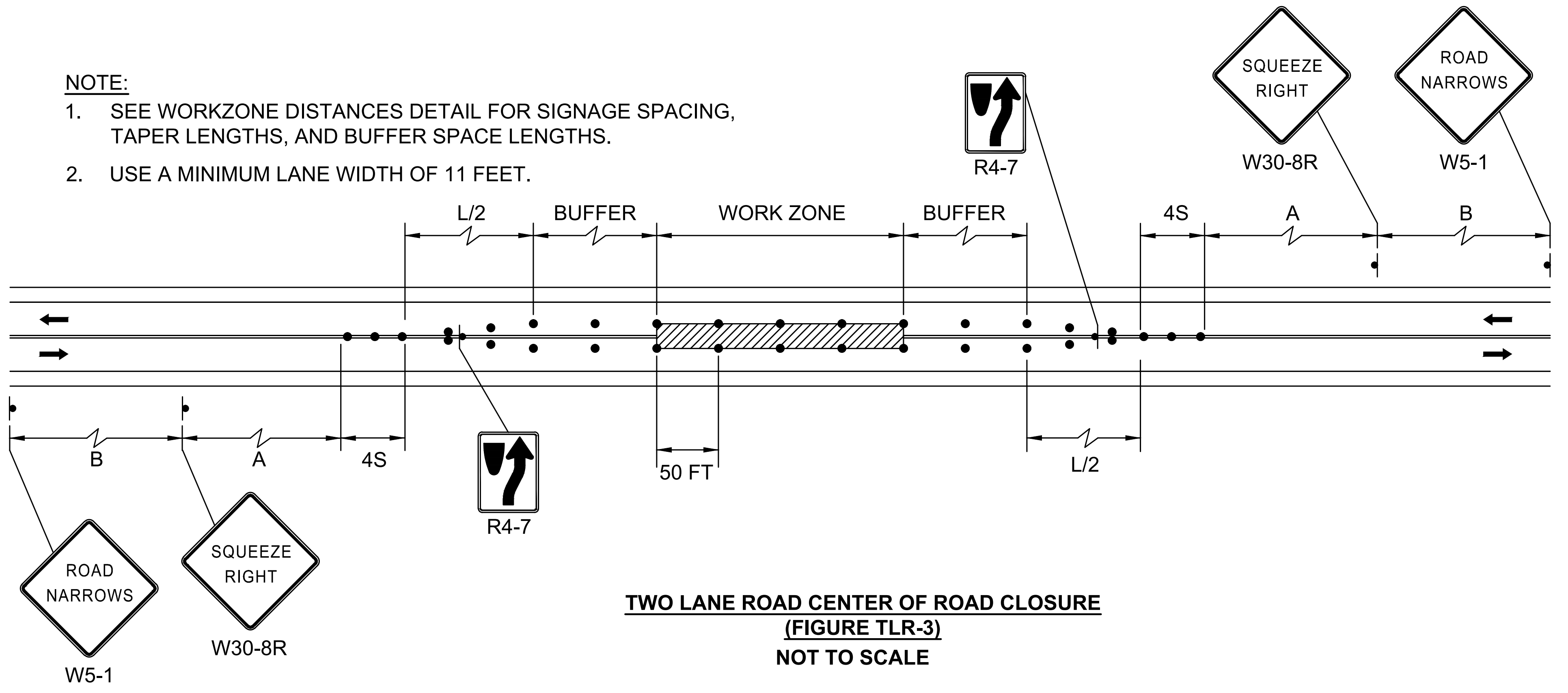
TWO LANE ROAD SHOULDER AND TRAVEL LANE CLOSED
(FIGURE TLR-2)
NOT TO SCALE



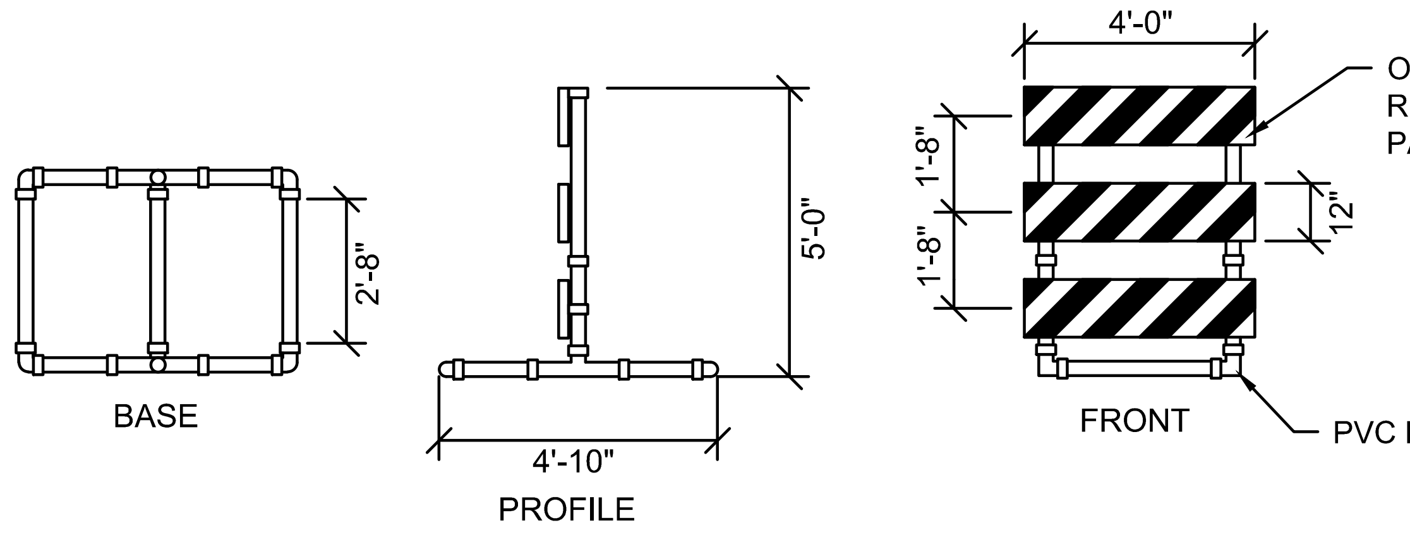
NOTE:
1. SEE WORKZONE DISTANCES DETAIL FOR SIGNAGE SPACING, TAPER LENGTHS, AND BUFFER SPACE LENGTHS.
2. USE A MINIMUM LANE WIDTH OF 11 FEET.
3. *THIS DELINEATION CAN BE REMOVED TO INCREASE CAPACITY OF THE INTERSECTION. POLICE OFFICER CAN BE REMOVED AS WELL.

SINGLE LANE APPROACH ONE QUADRANT CLOSURE
(FIGURE INT-2)
NOT TO SCALE

NOTE:
1. SEE WORKZONE DISTANCES DETAIL FOR SIGNAGE SPACING, TAPER LENGTHS, AND BUFFER SPACE LENGTHS.
2. USE A MINIMUM LANE WIDTH OF 11 FEET.



TWO LANE ROAD CENTER OF ROAD CLOSURE
(FIGURE TLR-3)
NOT TO SCALE



TYPE III BARRICADE

NOTE: TYPE III BARRICADES SHALL MEET MUTCD REQUIREMENTS (CURRENT EDITION)

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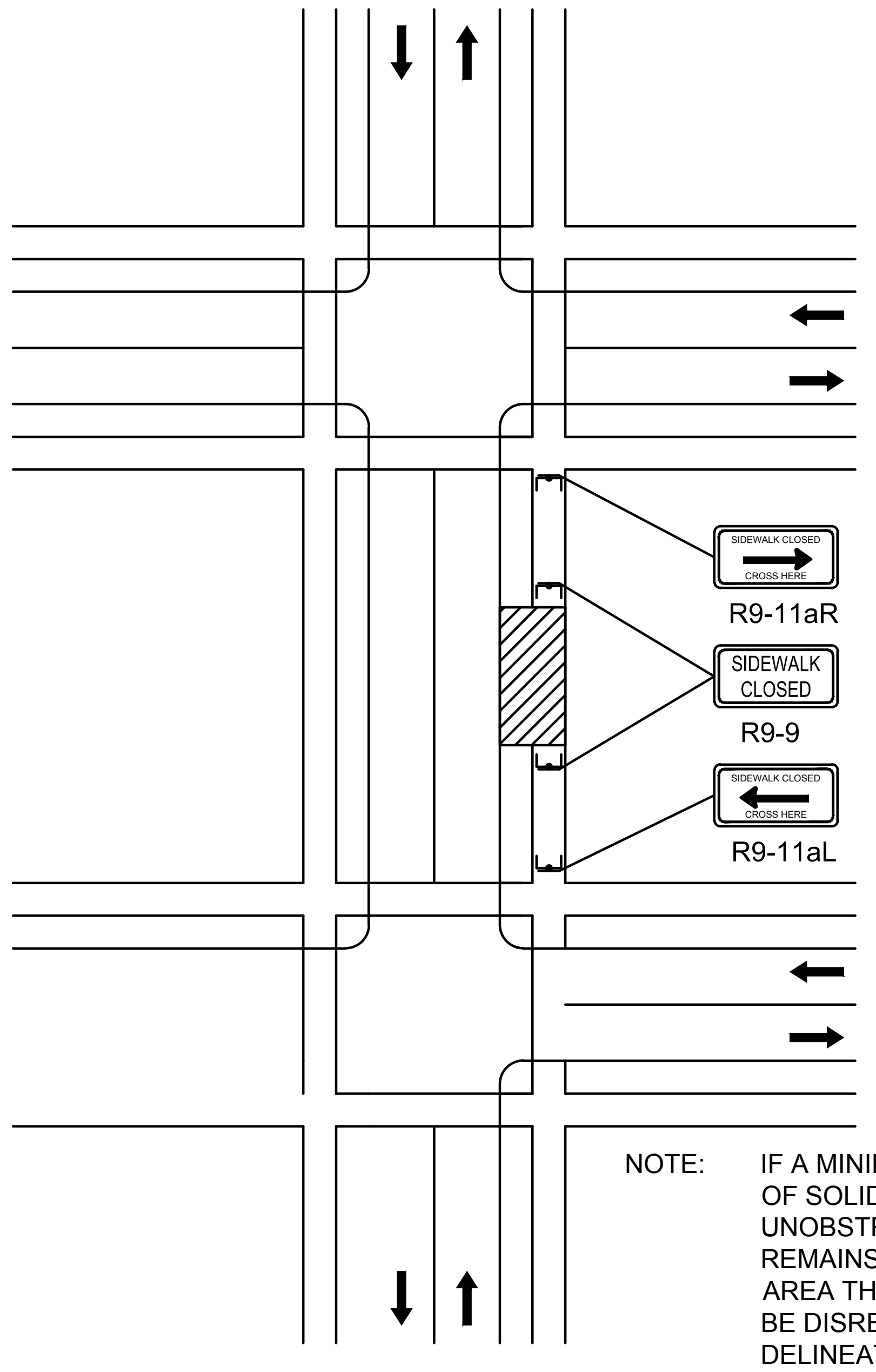
CHATHAM
MAIN STREET (ROUTE 28) FROM
GEORGE RYDER ROAD TO BARN HILL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	41	109
PROJECT FILE NO.	606596		

TEMPORARY TRAFFIC CONTROL PLANS

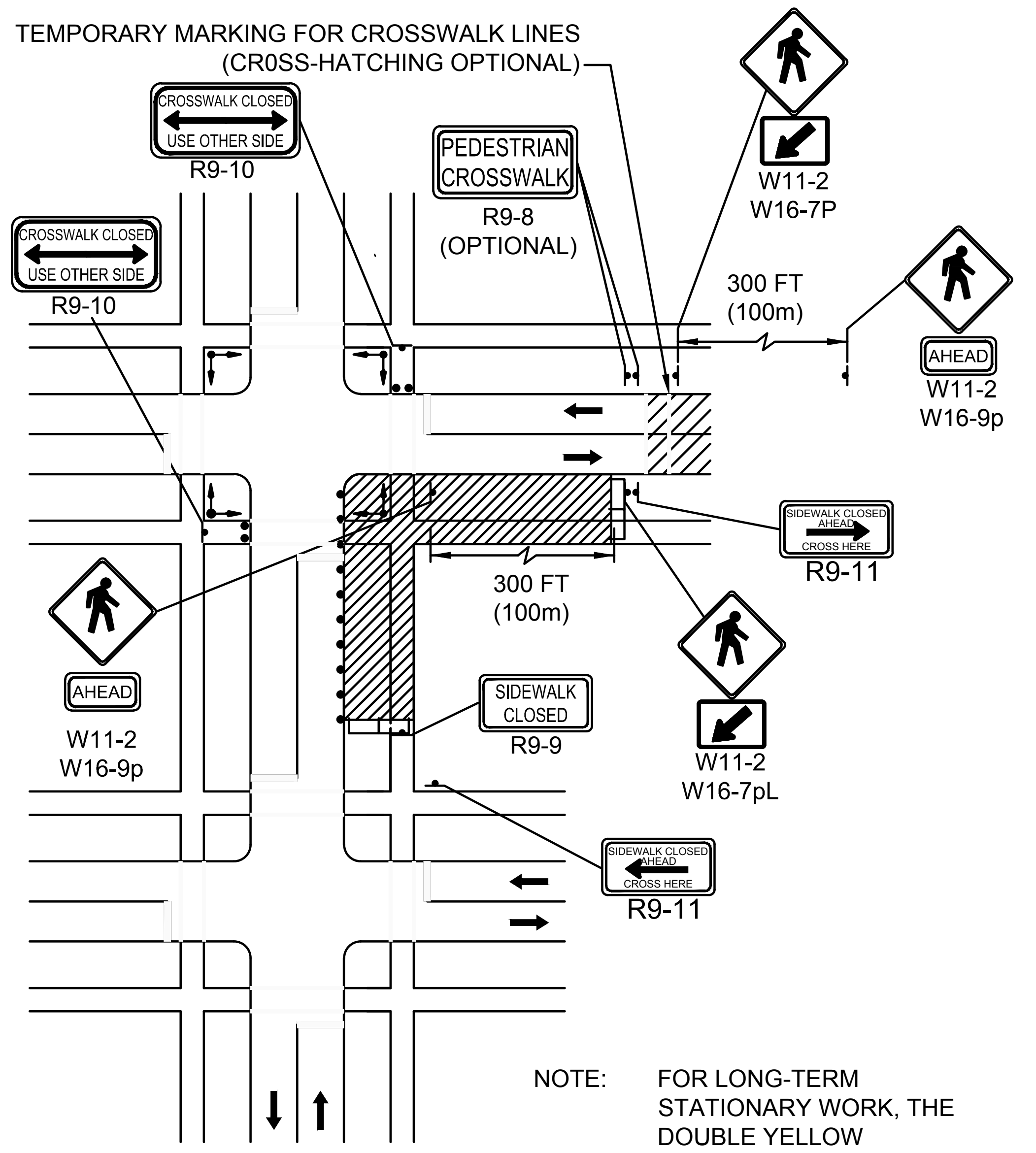
Plotted on 30-Mar-2018 1:58 PM

606596_TR(TTCP DETAILS).DWG



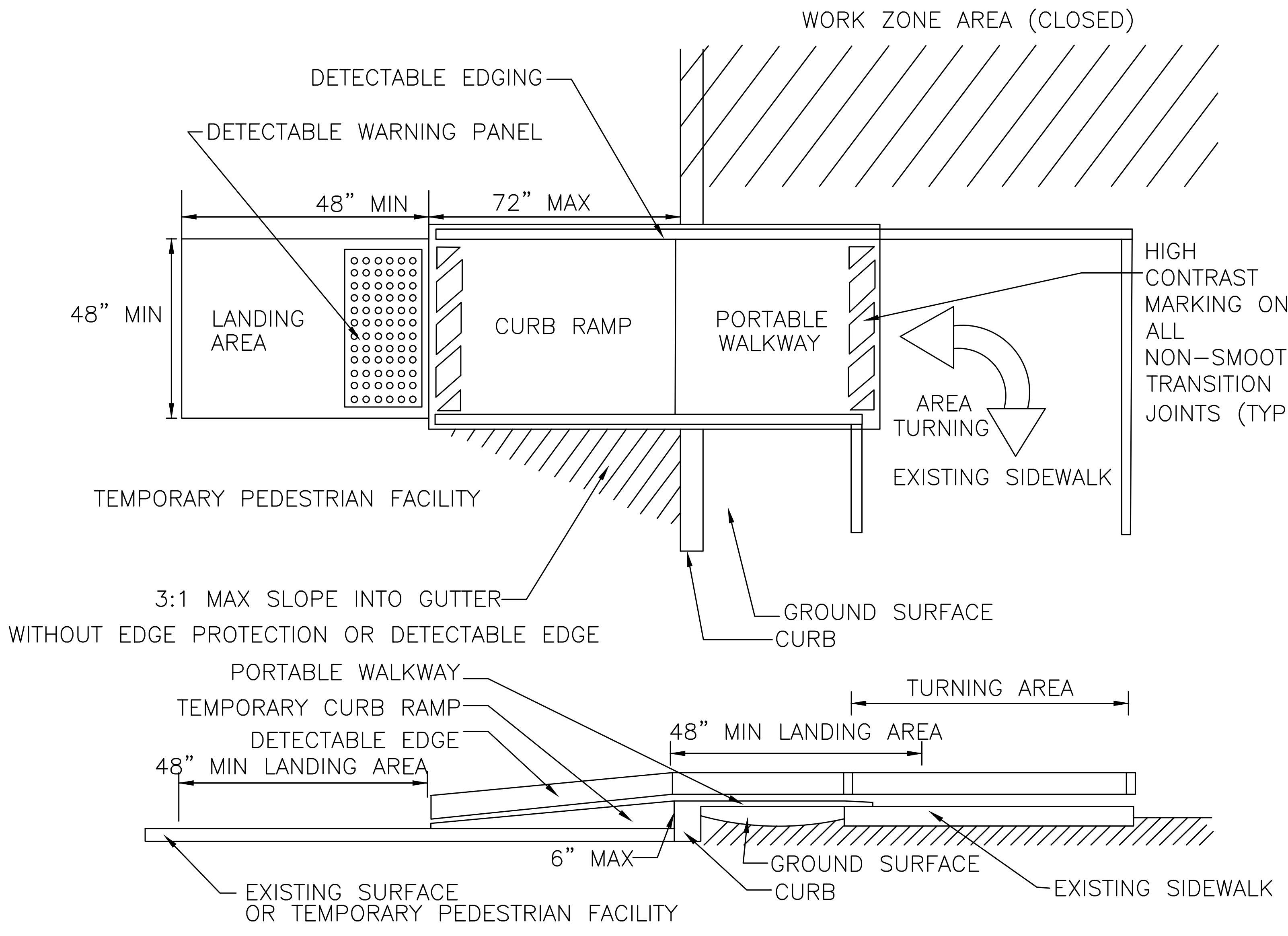
NOTE: IF A MINIMUM WIDTH OF 48" OF SOLID SMOOTH UNOBSTRUCTED SURFACE REMAINS ALONG THE WORK AREA THEN THE DETAIL CAN BE DISREGARDED. DELINEATION OF THE WORK AREA WILL BE REQUIRED. ALL PEDESTRIAN DETOUR ROUTES SHALL BE ADA/MAAB COMPLIANT IN THEIR ENTIRETY.

SIDEWALK CLOSED WITH DETOUR
(FIGURE PED-5)
NOT TO SCALE

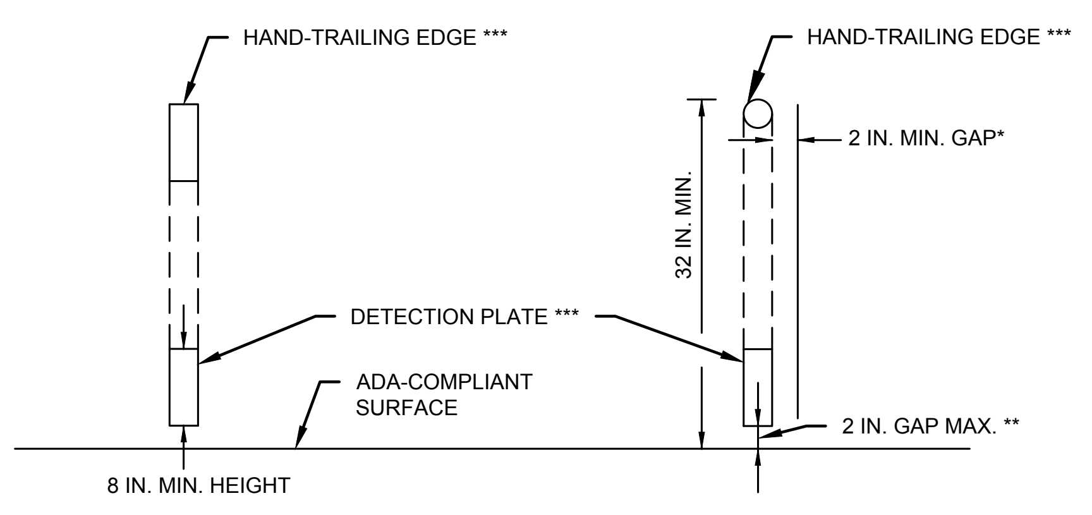


NOTE: FOR LONG-TERM STATIONARY WORK, THE DOUBLE YELLOW CENTERLINE AND/OR LANE LINES SHOULD BE REMOVED BETWEEN THE CROSSWALK LINES.

PEDESTRIAN DETOUR
(FIGURE PED-6)
NOT TO SCALE



PEDESTRIAN DETAILS
(FIGURE PED-2)
NOT TO SCALE



CROSS SECTION VIEW

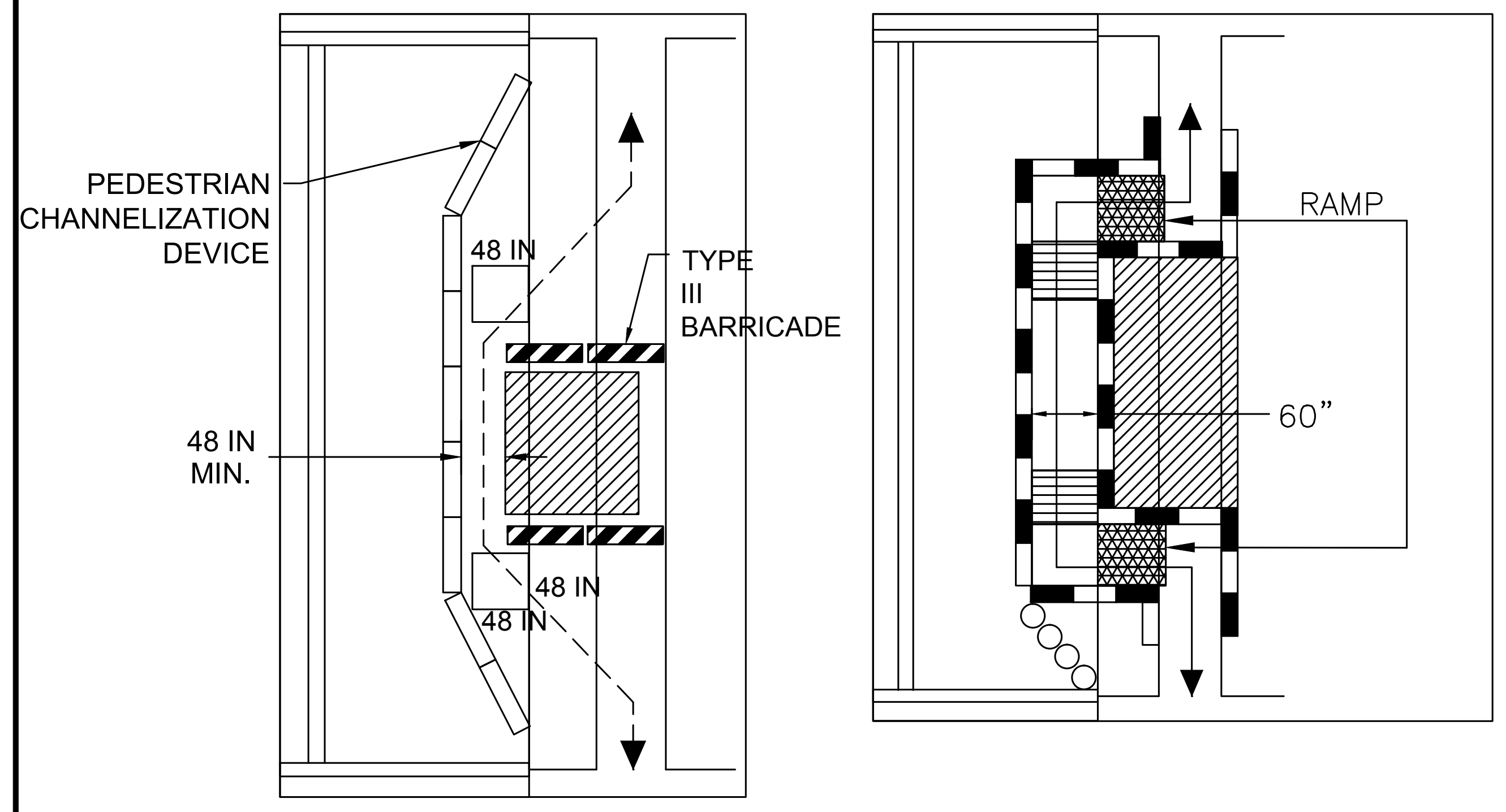
PEDESTRIAN CHANNELIZING DEVICE

*** THERE SHALL BE A 2 INCH GAP BETWEEN THE HAND-TRAILING EDGE AND ITS SUPPORT.**

**** A MAXIMUM 2 INCH GAP BETWEEN THE BOTTOM OF THE BOTTOM RAIL AND THE SURFACE MAY BE USED TO PROVIDE DRAINAGE.**

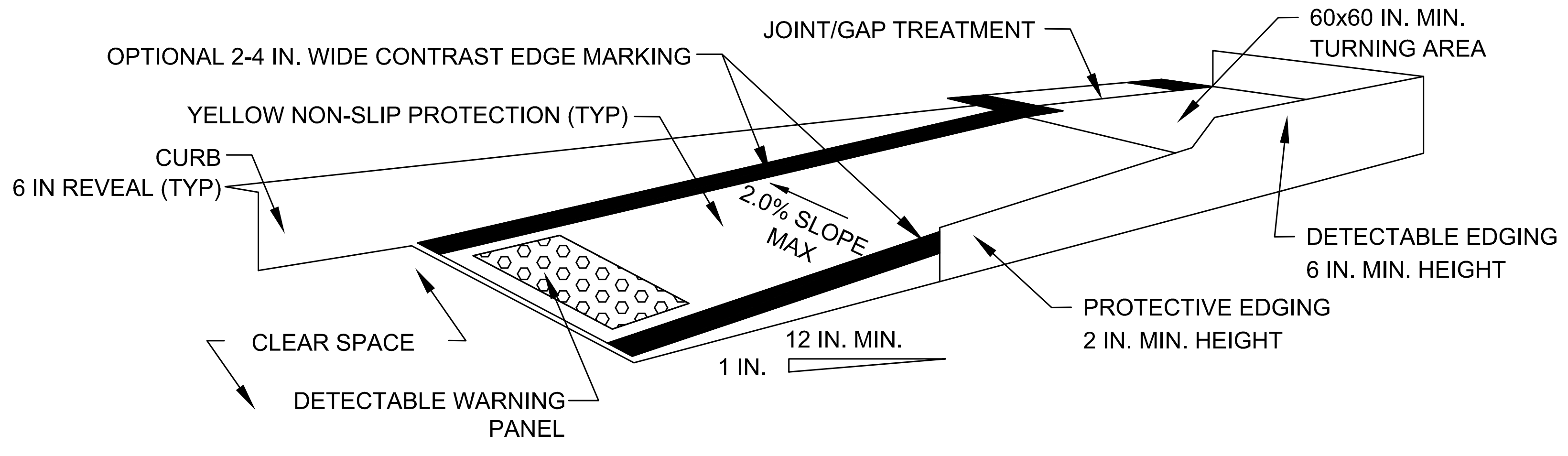
***** THE HAND-TRAILING EDGE AND DETECTION PLATE SHALL BE CONTINUOUS THROUGHOUT THE LENGTH OF THE PATH SUCH THAT A PEDESTRIAN USER WITH A LONG CANE CAN FOLLOW IT.**

PEDESTRIAN DETAILS
(FIGURE PED-4)
NOT TO SCALE



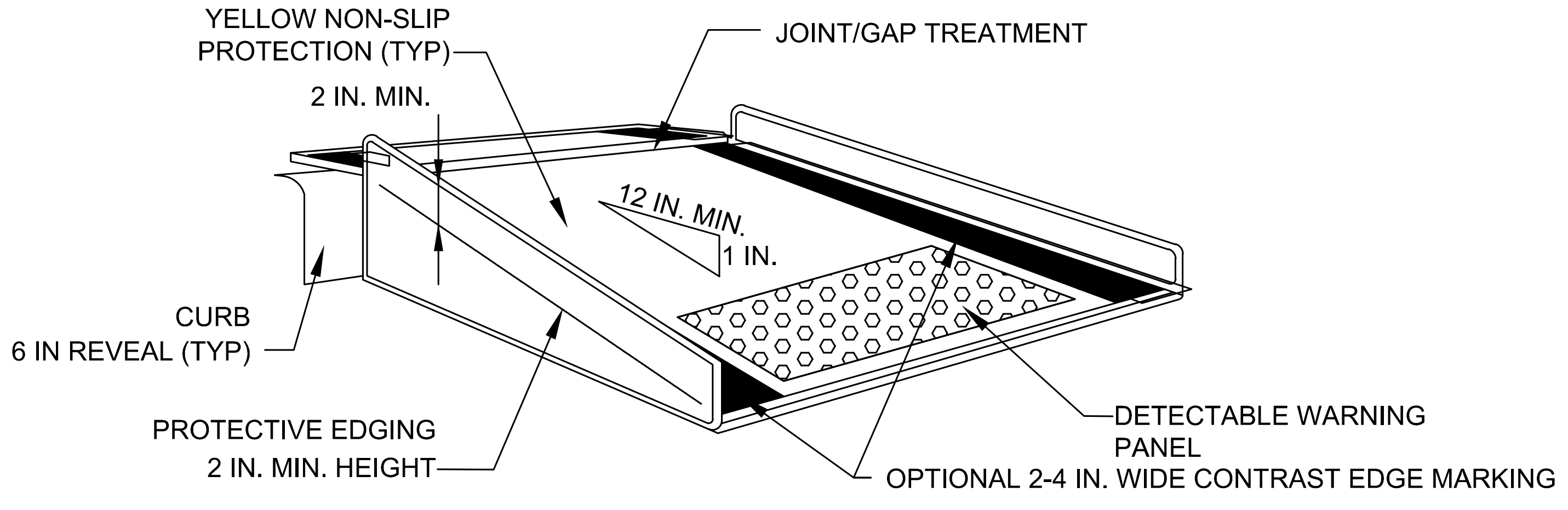
NOTES:
1. WHEN EXISTING PEDESTRIAN FACILITIES ARE DISRUPTED, CLOSED, OR RELOCATED IN A TTC ZONE, TEMPORARY FACILITIES SHALL BE PROVIDED AND THEY SHALL BE DETECTABLE AND INCLUDE ACCESSIBILITY FEATURES CONSISTENT WITH THE FEATURES PRESENT IN THE EXISTING PEDESTRIAN FACILITY.
2. A PEDESTRIAN CHANNELIZATION DEVICE THAT IS DETECTABLE BY A PERSON WITH A VISUAL DISABILITY TRAVELING WITH THE AID OF A LONG CANE SHALL BE PLACED ALONG THE FULL LENGTH OF THE TEMPORARY PEDESTRIAN ROUTE.
3. WHEN USED, TEMPORARY RAMPS SHALL COMPLY WITH AMERICANS WITH DISABILITIES ACT.
4. THE ALTERNATE PATHWAY SHOULD HAVE A SMOOTH CONTINUOUS HARD SURFACE FOR THE ENTIRE LENGTH OF THE TEMPORARY PEDESTRIAN FACILITY.
5. THE TEMPORARY SIDEWALK SHOULD BE A MINIMUM OF 4 FEET WIDE. IF THE SIDEWALK EXCEEDS 200 FEET THEN A 5 FOOT BY 5 FOOT PASSING ZONE SHALL BE PROVIDED NEAR THE MID-POINT OF THE CLOSURE.
6. THE PROTECTIVE REQUIREMENTS OF A TTC WORK ZONE MAY HAVE AN IMPACT IN DETERMINING THE NEED FOR TEMPORARY TRAFFIC BARRIERS AND THEIR USE IN PROVIDING PEDESTRIAN DELINEATION SHOULD BE BASED ON ENGINEERING JUDGMENT.
7. ON-DEMAND PEDESTRIAN ASSISTANCE PERSONNEL TO ASSIST WITH NAVIGATION AROUND THE CLOSURE/WORK AREA MAY BE CONSIDERED AS AN OPTION IN PLACE OF PROVIDING ADA/AAB DEVICES FOR WORK FOR CLOSURES LASTING 4 HOURS OR LESS.
8. CONTROLS ONLY FOR PEDESTRIAN TRAFFIC ARE SHOWN; VEHICULAR TRAFFIC SHOULD BE HANDLED AS SHOWN ELSEWHERE. THESE DETAILS ARE USED IN CONJUNCTION WITH THE PROPOSED LANE CLOSURE DETAILS AND DURING CONSTRUCTION STAGING, AS DETERMINED BY THE ENGINEER.

PEDESTRIAN DETAILS
(FIGURE PED-3)
NOT TO SCALE



JOINT/GAP TREATMENT
60x60 IN. MIN. TURNING AREA
OPTIONAL 2-4 IN. WIDE CONTRAST EDGE MARKING
YELLOW NON-SLIP PROTECTION (TYP)
CURB
6 IN REVEAL (TYP)
2.0% SLOPE MAX
DETECTABLE EDGING 6 IN. MIN. HEIGHT
PROTECTIVE EDGING 2 IN. MIN. HEIGHT
CLEAR SPACE
12 IN. MIN.
1 IN.
DETECTABLE WARNING PANEL

TEMPORARY CURB RAMP-PARALLEL TO CURB

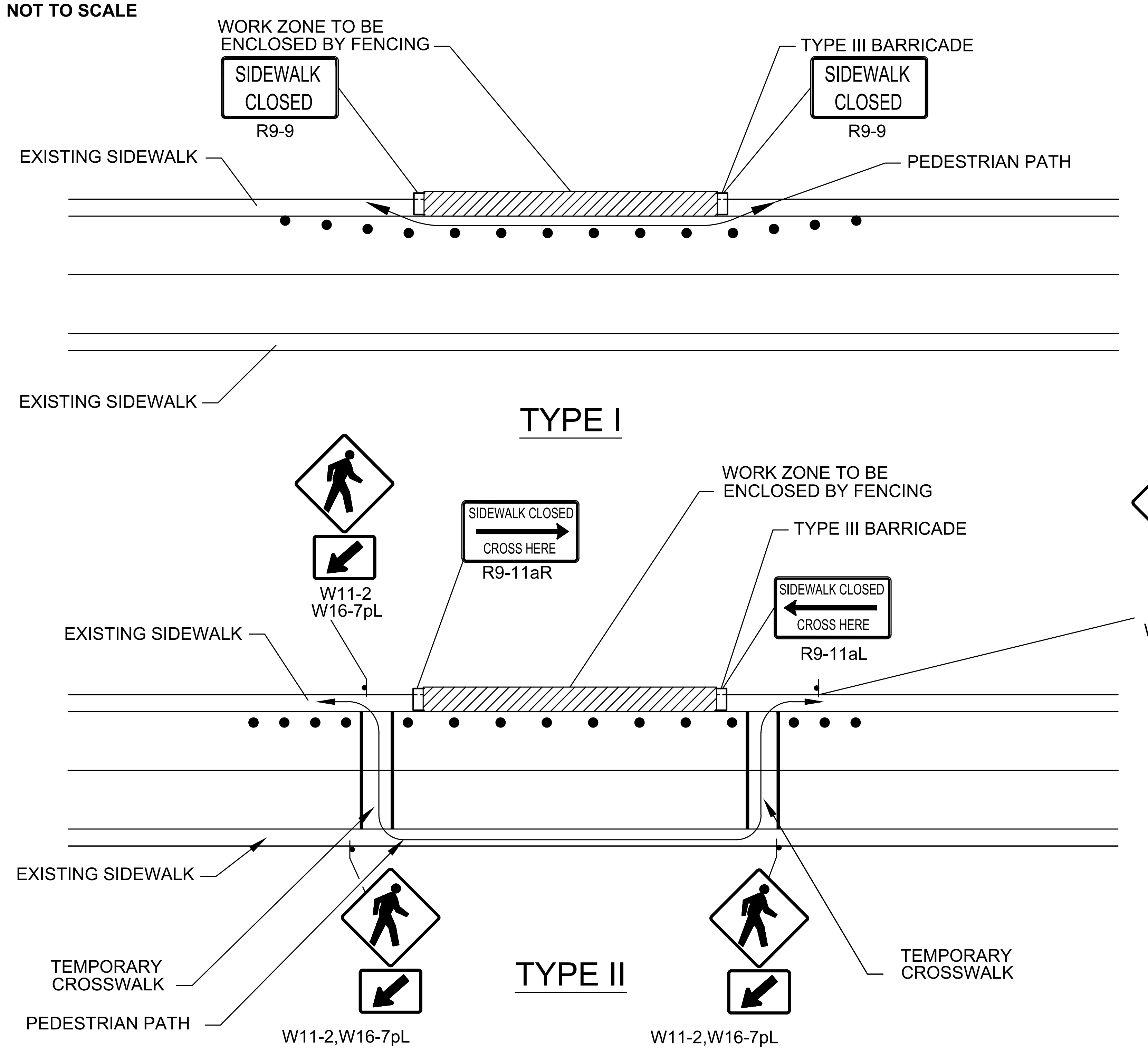


YELLOW NON-SLIP PROTECTION (TYP)
2 IN. MIN.
JOINT/GAP TREATMENT
12 IN. MIN.
1 IN.
CURB
6 IN REVEAL (TYP)
PROTECTIVE EDGING 2 IN. MIN. HEIGHT
DETECTABLE WARNING PANEL
OPTIONAL 2-4 IN. WIDE CONTRAST EDGE MARKING

TEMPORARY CURB RAMP-PERPENDICULAR TO CURB

NOTES:
1. CURB RAMPS SHALL BE 60 IN. MINIMUM WIDTH WITH A FIRM, STABLE, AND NON-SLIP SURFACE.
2. PROTECTIVE EDGING WITH A 2 IN. MINIMUM HEIGHT SHALL BE INSTALLED WHEN THE CURB RAMP OR LANDING PLATFORM HAS A VERTICAL DROP OF 6 IN. OR GREATER OR HAS A SIDE APRON SLOP STEEPER THAN 1:3 (33%). PROTECTIVE EDGING SHOULD BE CONSIDERED WHEN THE CURB RAMPS OR LANDING PLATFORMS HAVE A VERTICAL DROP OF 3 IN. OR MORE.
3. PROTECTABLE EDGING WITH 6 IN. MINIMUM HEIGHT AND CONTRASTING COLOR SHALL BE INSTALLED ON ALL CURB RAMP LANDINGS WHERE THE WALKWAY CHANGES DIRECTION (TURNS).
4. THE CURB RAMP WALKWAY AND LANDING AREA SURFACE SHALL BE OF A SOLID CONTINUOUS CONTRASTING COLOR ABUTTING UP TO THE EXISTING SIDEWALK.
5. CURB RAMPS AND LANDINGS SHOULD HAVE A 1:50 (2%) MAX CROSS-SLOPE.
6. CLEAR SPACE OF 48x48 IN. MINIMUM SHALL BE PROVIDED ABOVE AND BELOW THE CURB RAMP.
7. WATER FLOW IN THE GUTTER SYSTEM SHALL HAVE MINIMAL RESTRICTION.
8. LATERAL JOINTS OR GAPS BETWEEN SURFACES SHALL BE LESS THAN 0.5 IN. WIDTH.
9. CHANGES BETWEEN SURFACE HEIGHTS SHOULD NOT EXCEED 0.5 IN. LATERAL EDGES SHOULD BE VERTICAL UP TO 0.25 IN. HIGH, AND BEVELED AT 1:2 BETWEEN 0.25 IN. AND 0.5 IN. HEIGHT.
10. IF A TEMPORARY PEDESTRIAN RAMP LEADS TO A CROSSWALK, THEN A DETECTABLE WARNING PAD MUST BE ADHERED TO THE BASE OF THE RAMP. IF IT LEADS TO A PROTECTED PEDESTRIAN BYPASS THAT DOES NOT CONFLICT WITH VEHICULAR TRAFFIC, THEN A PAD SHALL NOT BE INSTALLED ON THE RAMP.

PEDESTRIAN DETAILS
(FIGURE PED-1)
NOT TO SCALE



NOTES
1. ADDITIONAL ADVANCE WARNING MAY BE NECESSARY.
2. CONTROLS ONLY FOR PEDESTRIAN TRAFFIC ARE SHOWN. VEHICULAR TRAFFIC SHOULD BE HANDLED AS SHOWN ELSEWHERE.
3. STREET LIGHTING SHOULD BE CONSIDERED WHEN LOCATING CONTROL DEVICES.
4. IF THE WORK ZONE DOES NOT PERMIT PEDESTRIANS TO TRAVEL ADJACENT TO IT AS SHOWN IN PEDESTRIAN BYPASS TYPE I, TEMPORARY CROSSWALKS WITH APPROPRIATE SIGNS SHOULD BE INSTALLED TO CROSS PEDESTRIANS TO THE OPPOSITE SIDE OF THE STREET AS SHOWN IN PEDESTRIAN BYPASS TYPE II, AND AS DIRECTED BY THE ENGINEER. TEMPORARY CURB RAMPS WILL BE REQUIRED AT ALL TEMPORARY CROSSWALK LOCATIONS.
5. BYPASS IS TO BE USED IN CONJUNCTION WITH THE PROPOSED LANE CLOSURE DETAILS AND DURING CONSTRUCTION STAGING, AS DIRECTED BY THE ENGINEER.
6. THE TEMPORARY SIDEWALK SHOULD BE A MINIMUM OF 4 FEET WIDE. IF THIS WALKWAY EXCEEDS 200 FEET THEN A 5 FOOT X 5 FOOT PASSING ZONE. (FOR SHORT TERM SETUPS < 10 HOURS, THIS CONDITION MAY BE WAIVED. A NOTE WOULD NEED TO BE INCLUDED IN THE TTCP THAT STATES HOW THE CONTRACTOR SHOULD ADDRESS THIS ISSUE.)

PEDESTRIAN BYPASS
(FIGURE PED-7)
NOT TO SCALE

CHATHAM
MAIN STREET (ROUTE 28) FROM
GEORGE RYDER ROAD TO BARN HILL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	42	109
PROJECT FILE NO. 606596			

TEMPORARY TRAFFIC CONTROL PLANS

▾	SIGN
⊓	TYPE III BARRICADE
Ⓟ	POLICE OFFICER DETAIL
⇨	TRAFFIC FLOW
▩	UNRESTRICTED WORKZONE
▨	RESTRICTED WORKZONE
•	REFLECTORIZED DRUM
·	REFLECTORIZED CONE
▂	PEDESTRIAN MANAGEMENT GUIDANCE SYSTEM
⇠⇢	PEDESTRIAN PATH

PHASE 1, STAGE I - CONSTRUCTION OF MAIN STREET/ROUTE 28 - SOUTH SIDE

1. THE WORKZONES SHOWN ARE INTENDED TO SUPPORT THE RECONSTRUCTION OF THE SOUTH SIDE OF MAIN STREET/ROUTE 28 INCLUDING BUT NOT LIMITED TO SIDEWALKS, WHEELCHAIR RAMPS, CURBING, LANDSCAPING, HARDSCAPING, ROADWAY BASE, DRIVEWAYS AND UTILITIES.
2. UPON COMPLETION OF THIS STAGE OF WORK THE EDGE OF THE ROADWAY SHALL BE RE-GRADED AS NECESSARY TO COMPLEMENT THE CONSTRUCTION.
3. ADDITIONAL WORK MAY BE PERFORMED DURING THIS PHASE THROUGH THE USE OF MASSDOT STANDARD TEMPORARY TRAFFIC CONTROL DETAIL WITH PRIOR APPROVAL FROM THE ENGINEER.
4. IN AREAS SHOWN AS RESTRICTED WORKZONES, VEHICLE ACCESS SHALL BE MAINTAINED AS BEST AS PRACTICAL BY LIMITING DURATIONS AND IMPACTS AS BEST AS PRACTICAL.
5. CONTRACTOR SHALL REMOVE ANY EXISTING PAVEMENT MARKINGS THAT CONFLICT WITH PROPOSED TEMPORARY MARKINGS AND SHALL BAG OR REMOVE SIGNAGE THAT CONFLICTS WITH EXISTING TRAFFIC PATTERNS.
6. ALL PROPOSED CENTER LINES, LANE LINES AND EDGE LINES SHALL BE 6" PAINTED.
7. ALL PROPOSED CROSSWALKS, STOP LINES AND GORE LINES SHALL BE 12" PAINTED.
8. SEE SHEETS 16 - 20 FOR CONSTRUCTION PLAN. SEE SHEETS 39 - 41 FOR ADVANCED SIGNAGE AND TTCP DETAILS.
9. AN EXCAVATION GREATER THAN OR EQUAL TO 4" IN DEPTH MUST BE BACKFILLED WITH A 4:1 SLOPE DURING NON-WORKING HOURS. SEE DETAILS ON SHEET 39 - 41 FOR INFORMATION.
10. POLICE OFFICER DETAIL SHALL BE PROVIDED IN THE GENERAL LOCATION SHOWN ON THE PLAN, WITH THE OFFICER DETERMINING THE EXACT LOCATION.
11. FOR SPECIFICATION OF PEDESTRIAN MANAGEMENT GUIDANCE SYSTEM AND TEMPORARY WHEELCHAIR RAMPS, REFER TO SPECIAL PROVISION ITEM NUMBERS 657.1, 657.11 and 855.

606596_HD(TTCP) - PH I.DWG Plotted on 30-Mar-2018 1:59 PM

CHATHAM
MAIN STREET (ROUTE 28) FROM GEORGE RYDER ROAD TO BARN HILL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	43	109
PROJECT FILE NO.	606596		

TEMPORARY TRAFFIC CONTROL PLANS

▾	SIGN
⊓	TYPE III BARRICADE
Ⓟ	POLICE OFFICER DETAIL
⇨	TRAFFIC FLOW
■	UNRESTRICTED WORKZONE
▨	RESTRICTED WORKZONE
●	REFLECTORIZED DRUM
•	REFLECTORIZED CONE
▬	PEDESTRIAN MANAGEMENT GUIDANCE SYSTEM
◀‒ ‒▶	PEDESTRIAN PATH

PHASE 1, STAGE II - RECONSTRUCTION OF MAIN STREET/ROUTE 28 - NORTH SIDE

1. THE WORKZONES SHOWN ARE INTENDED TO SUPPORT THE RECONSTRUCTION OF THE NORTH SIDE OF MAIN STREET/ROUTE 28 INCLUDING BUT NOT LIMITED TO SIDEWALKS, WHEELCHAIR RAMPS, CURBING, LANDSCAPING, HARDSCAPING, ROADWAY BASE, DRIVEWAYS AND UTILITIES.
2. UPON COMPLETION OF THIS STAGE OF WORK THE EDGE OF THE ROADWAY SHALL BE RE-GRADED AS NECESSARY TO COMPLEMENT THE CONSTRUCTION.
3. ADDITIONAL WORK MAY BE PERFORMED DURING THIS PHASE THROUGH THE USE OF MASSDOT STANDARD TEMPORARY TRAFFIC CONTROL DETAIL WITH PRIOR APPROVAL FROM THE ENGINEER.
4. IN AREAS SHOWN AS RESTRICTED WORKZONES, VEHICLE ACCESS SHALL BE MAINTAINED AS BEST AS PRACTICAL BY LIMITING DURATIONS AND IMPACTS AS BEST AS PRACTICAL.
5. CONTRACTOR SHALL REMOVE ANY EXISTING PAVEMENT MARKINGS THAT CONFLICT WITH PROPOSED TEMPORARY MARKINGS AND SHALL BAG OR REMOVE SIGNAGE THAT CONFLICTS WITH EXISTING TRAFFIC PATTERNS.
6. ALL PROPOSED CENTER LINES, LANE LINES AND EDGE LINES SHALL BE 6" PAINTED.
7. ALL PROPOSED CROSSWALKS, STOP LINES AND GORE LINES SHALL BE 12" PAINTED.
8. SEE SHEETS 16 - 20 FOR CONSTRUCTION PLAN. SEE SHEETS 39 - 41 FOR ADVANCED SIGNAGE AND TTCP DETAILS.
9. AN EXCAVATION GREATER THAN OR EQUAL TO 4" IN DEPTH MUST BE BACKFILLED WITH A 4:1 SLOPE DURING NON-WORKING HOURS. SEE DETAILS ON SHEET 39 - 41 FOR INFORMATION.
10. FOR SPECIFICATION OF PEDESTRIAN MANAGEMENT GUIDANCE SYSTEM AND TEMPORARY WHEELCHAIR RAMPS, REFER TO SPECIAL PROVISION ITEM NUMBERS 657.1, 657.11 AND 855.

Plotted on 30-Mar-2018 2:00 PM

606596_HD(TTCP) - PH II.DWG

CHATHAM
MAIN STREET (ROUTE 28) FROM GEORGE RYDER ROAD TO BARN HILL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	44	109
PROJECT FILE NO.	606596		

TEMPORARY TRAFFIC CONTROL PLANS

▾	SIGN
⊓	TYPE III BARRICADE
Ⓟ	POLICE OFFICER DETAIL
⇨	TRAFFIC FLOW
▇	UNRESTRICTED WORKZONE
▨	RESTRICTED WORKZONE
•	REFLECTORIZED DRUM
·	REFLECTORIZED CONE
▲	PEDESTRIAN MANAGEMENT GUIDANCE SYSTEM
↔	PEDESTRIAN PATH

PHASE 2, STAGE I - CONSTRUCTION OF MAIN STREET/ROUTE 28 AT GEORGE RYDER ROAD - SOUTH SIDE

1. THE WORKZONES SHOWN ARE INTENDED TO SUPPORT THE RECONSTRUCTION OF THE SOUTH SIDE OF MAIN STREET/ROUTE 28 AT GEORGE RYDER ROAD INCLUDING BUT NOT LIMITED TO SIDEWALKS, WHEELCHAIR RAMPS, CURBING, LANDSCAPING, HARDSCAPING, ROADWAY BASE, DRIVEWAYS AND UTILITIES.
2. UPON COMPLETION OF THIS STAGE OF WORK THE EDGE OF THE ROADWAY SHALL BE RE-GRADED AS NECESSARY TO COMPLEMENT THE CONSTRUCTION.
3. ADDITIONAL WORK MAY BE PERFORMED DURING THIS PHASE THROUGH THE USE OF MASSDOT STANDARD TEMPORARY TRAFFIC CONTROL DETAIL WITH PRIOR APPROVAL FROM THE ENGINEER.
4. IN AREAS SHOWN AS RESTRICTED WORKZONES, VEHICLE ACCESS SHALL BE MAINTAINED AS BEST AS PRACTICAL BY LIMITING DURATIONS AND IMPACTS AS BEST AS PRACTICAL.
5. CONTRACTOR SHALL REMOVE ANY EXISTING PAVEMENT MARKINGS THAT CONFLICT WITH PROPOSED TEMPORARY MARKINGS AND SHALL BAG OR REMOVE SIGNAGE THAT CONFLICTS WITH EXISTING TRAFFIC PATTERNS.
6. ALL PROPOSED CENTER LINES, LANE LINES AND EDGE LINES SHALL BE 6" PAINTED.
7. ALL PROPOSED CROSSWALKS, STOP LINES AND GORE LINES SHALL BE 12" PAINTED.
8. SEE SHEETS 16 - 20 FOR CONSTRUCTION PLAN. SEE SHEETS 39 - 41 FOR ADVANCED SIGNAGE AND TTCP DETAILS.
9. AN EXCAVATION GREATER THAN OR EQUAL TO 4" IN DEPTH MUST BE BACKFILLED WITH A 4:1 SLOPE DURING NON-WORKING HOURS. SEE DETAILS ON SHEET 39 - 41 FOR INFORMATION.
10. POLICE OFFICER DETAIL SHALL BE PROVIDED IN THE GENERAL LOCATION SHOWN ON THE PLAN, WITH THE OFFICER DETERMINING THE EXACT LOCATION.

606596_HD(TTCP)_WEST ROT_PH II.DWG   Plotted on 30-Mar-2018 2:01 PM

CHATHAM
MAIN STREET (ROUTE 28) FROM
GEORGE RYDER ROAD TO BARN HILL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	45	109
PROJECT FILE NO.	606596		

TEMPORARY TRAFFIC CONTROL PLANS

▾	SIGN
⊓	TYPE III BARRICADE
Ⓟ	POLICE OFFICER DETAIL
⇨	TRAFFIC FLOW
▬	UNRESTRICTED WORKZONE
▨	RESTRICTED WORKZONE
●	REFLECTORIZED DRUM
•	REFLECTORIZED CONE
▬	PEDESTRIAN MANAGEMENT GUIDANCE SYSTEM
⇠⇢	PEDESTRIAN PATH

PHASE 2, STAGE II - CONSTRUCTION OF MAIN STREET/ROUTE 28 AT GEORGE RYDER ROAD - NORTHEAST CORNER

1. THE WORKZONES SHOWN ARE INTENDED TO SUPPORT THE RECONSTRUCTION OF THE NORTHEAST CORNER OF MAIN STREET/ROUTE 28 AT GEORGE RYDER ROAD INCLUDING BUT NOT LIMITED TO SIDEWALKS, WHEELCHAIR RAMPS, CURBING, LANDSCAPING, HARDSCAPING, ROADWAY BASE, DRIVEWAYS AND UTILITIES.
2. UPON COMPLETION OF THIS STAGE OF WORK THE EDGE OF THE ROADWAY SHALL BE RE-GRADED AS NECESSARY TO COMPLEMENT THE CONSTRUCTION.
3. ADDITIONAL WORK MAY BE PERFORMED DURING THIS PHASE THROUGH THE USE OF MASSDOT STANDARD TEMPORARY TRAFFIC CONTROL DETAIL WITH PRIOR APPROVAL FROM THE ENGINEER.
4. IN AREAS SHOWN AS RESTRICTED WORKZONES, VEHICLE ACCESS SHALL BE MAINTAINED AS BEST AS PRACTICAL BY LIMITING DURATIONS AND IMPACTS AS BEST AS PRACTICAL.
5. CONTRACTOR SHALL REMOVE ANY EXISTING PAVEMENT MARKINGS THAT CONFLICT WITH PROPOSED TEMPORARY MARKINGS AND SHALL BAG OR REMOVE SIGNAGE THAT CONFLICTS WITH EXISTING TRAFFIC PATTERNS.
6. ALL PROPOSED CENTER LINES, LANE LINES AND EDGE LINES SHALL BE 6" PAINTED.
7. ALL PROPOSED CROSSWALKS, STOP LINES AND GORE LINES SHALL BE 12" PAINTED.
8. SEE SHEETS 16 - 20 FOR CONSTRUCTION PLAN. SEE SHEETS 39 - 41 FOR ADVANCED SIGNAGE AND TTCP DETAILS.
9. AN EXCAVATION GREATER THAN OR EQUAL TO 4" IN DEPTH MUST BE BACKFILLED WITH A 4:1 SLOPE DURING NON-WORKING HOURS. SEE DETAILS ON SHEET 39 - 41 FOR INFORMATION.
10. FOR SPECIFICATION OF PEDESTRIAN MANAGEMENT GUIDANCE SYSTEM AND TEMPORARY WHEELCHAIR RAMPS, REFER TO SPECIAL PROVISION ITEM NUMBERS 657.1, 657.11 AND 855.
11. POLICE OFFICER DETAIL SHALL BE PROVIDED IN THE GENERAL LOCATION SHOWN ON THE PLAN, WITH THE OFFICER DETERMINING THE EXACT LOCATION.

Plotted on 30-Mar-2018 2:02 PM

606596_HD(TTCP)_WEST ROT_PH I.DWG

CHATHAM
MAIN STREET (ROUTE 28) FROM GEORGE RYDER ROAD TO BARN HILL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	46	109
PROJECT FILE NO.	606596		

TEMPORARY TRAFFIC CONTROL PLANS

▾	SIGN
⌅	TYPE II BARRICADE
⊓	TYPE III BARRICADE
Ⓟ	POLICE OFFICER DETAIL
⇨	TRAFFIC FLOW
▒	UNRESTRICTED WORKZONE
▨	RESTRICTED WORKZONE
●	REFLECTORIZED DRUM
•	REFLECTORIZED CONE
▄▄	PEDESTRIAN MANAGEMENT GUIDANCE SYSTEM
◀- - ▶	PEDESTRIAN PATH

PHASE 2, STAGE III - CONSTRUCTION OF MAIN STREET/ROUTE 28 AT GEORGE RYDER ROAD - NORTHWEST CORNER

1. THE WORKZONES SHOWN ARE INTENDED TO SUPPORT THE RECONSTRUCTION OF THE NORTHWEST CORNER OF MAIN STREET/ROUTE 28 AT GEORGE RYDER ROAD INCLUDING BUT NOT LIMITED TO SIDEWALKS, WHEELCHAIR RAMPS, CURBING, LANDSCAPING, HARDSCAPING, ROADWAY BASE, DRIVEWAYS AND UTILITIES.
2. UPON COMPLETION OF THIS STAGE OF WORK THE EDGE OF THE ROADWAY SHALL BE RE-GRADED AS NECESSARY TO COMPLEMENT THE CONSTRUCTION.
3. ADDITIONAL WORK MAY BE PERFORMED DURING THIS PHASE THROUGH THE USE OF MASSDOT STANDARD TEMPORARY TRAFFIC CONTROL DETAIL WITH PRIOR APPROVAL FROM THE ENGINEER.
4. IN AREAS SHOWN AS RESTRICTED WORKZONES, VEHICLE ACCESS SHALL BE MAINTAINED AS BEST AS PRACTICAL BY LIMITING DURATIONS AND IMPACTS AS BEST AS PRACTICAL.
5. CONTRACTOR SHALL REMOVE ANY EXISTING PAVEMENT MARKINGS THAT CONFLICT WITH PROPOSED TEMPORARY MARKINGS AND SHALL BAG OR REMOVE SIGNAGE THAT CONFLICTS WITH EXISTING TRAFFIC PATTERNS.
6. ALL PROPOSED CENTER LINES, LANE LINES AND EDGE LINES SHALL BE 6" PAINTED.
7. ALL PROPOSED CROSSWALKS, STOP LINES AND GORE LINES SHALL BE 12" PAINTED.
8. SEE SHEETS 16 - 20 FOR CONSTRUCTION PLAN. SEE SHEETS 39 - 41 FOR ADVANCED SIGNAGE AND TTCP DETAILS.
9. AN EXCAVATION GREATER THAN OR EQUAL TO 4" IN DEPTH MUST BE BACKFILLED WITH A 4:1 SLOPE DURING NON-WORKING HOURS. SEE DETAILS ON SHEET 39 - 41 FOR INFORMATION.

N
305+21.86
350'
350'
305
ROAD NARROWS
W5-1
W1-4L
200' BUFFER
GEORGE RYDER ROAD PUBLIC - 40' WIDE
304
1970 TOWN LAYOUT
1970 TOWN LAYOUT
CONTRACTOR SHALL STAGE CONSTRUCTION TO PROVIDE ACCESS TO ALL RESIDENCES AND BUSINESSES DURING CONSTRUCTION (TYP)
303
DETOUR
M4-9bL
TYPE III BARRICADE
TEMP DYCL
CONSTRUCT SIDEWALK, WHEELCHAIR RAMPS, CURBING, LANDSCAPING, HARDSCAPING, ROADWAY BASE, DRIVEWAYS AND UTILITIES. RE-GRADE ROADWAY WHERE NECESSARY TO MATCH EX ROADWAY TO INSTALLED FEATURES (TYP)
PROP TEMP EASEMENT (TYP)
CW
302
11'
11'
ACCESSIBLE PATH BEYOND HESS DRIVEWAY SHALL BE RESTORED AT THE COMPLETION OF EACH WORK DAY. POLICE DETAIL SHALL PROVIDE ASSISTANCE TO PEDESTRIANS AROUND WORKZONE WHILE ACTIVE.
R&D CURBING AND LANDSCAPING (TYP)
CROSSWALK CLOSED
R9-9 (MOD)
TYPE III BARRICADE
301
TEMP DYCL
SIDEWALK CLOSED
CROSS HERE
R9-11aR
TYPE III BARRICADE
DRUMS @ 15' O.C. (TYP.)
STOP
R1-1
1927 STATE HIGHWAY LAYOUT (NO. 2414)
CONES @ 15' O.C. (TYP.)
100+00
101
102
103
TEMP DYCL
104
501+75.92
500+00
SL
105
501
300+00
600+00
11'
11'
CW
106
107
90' TAPER
108
109
110
111
112
350'
350'
1927 STATE HIGHWAY LAYOUT (NO. 2414)
1927 STATE HIGHWAY LAYOUT (NO. 2414)
MAIN STREET PUBLIC - 60' WIDE
ROAD NARROWS
W5-1
W1-4L
W11-2
W16-7PR
W11-2
W16-7PL
1960 TOWN LAYOUT
SEAQUANSET ROAD PUBLIC - 35' WIDE
1960 TOWN LAYOUT
200' BUFFER
350'
350'
ROAD NARROWS
W5-1
W1-4R
W11-2
W16-7PL
W11-2
W16-7PR
TYPE III BARRICADE
CROSSWALK CLOSED
R9-9 (MOD)
TOWN LAYOUT
601
TOWN LAYOUT
601+38.55
GEORGE RYDER ROAD SOUTH PRIVATE - 33' WIDE
W11-2
W16-7PR
W11-2
W16-7PL
0
40
100
200
SCALE: 1" = 40'

606596_HD(TTCP)_WEST ROT_PH IB.DWG   Plotted on 30-Mar-2018 2:02 PM

CHATHAM
MAIN STREET (ROUTE 28) FROM GEORGE RYDER ROAD TO BARN HILL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	47	109
PROJECT FILE NO. 606596			

TEMPORARY TRAFFIC CONTROL PLANS

▾	SIGN
⊓	TYPE III BARRICADE
Ⓟ	POLICE OFFICER DETAIL
⇨	TRAFFIC FLOW
▬	UNRESTRICTED WORKZONE
▨	RESTRICTED WORKZONE
•	REFLECTORIZED DRUM
·	REFLECTORIZED CONE
▟	PEDESTRIAN MANAGEMENT GUIDANCE SYSTEM
⇠ ⇢	PEDESTRIAN PATH

PHASE 2, STAGE IV - CONSTRUCTION OF MAIN STREET/ROUTE 28 AT GEORGE RYDER ROAD - SPLITTER ISLANDS

1. THE WORKZONES SHOWN ARE INTENDED BUT NOT LIMITED TO SUPPORT THE CONSTRUCTION OF THE SPLITTER ISLANDS FOR THE PROPOSED ROUNDABOUT AT MAIN STREET/ROUTE 28 AT GEORGE RYDER ROAD.
2. CONSTRUCTION SHALL BE STAGED SUCH THAT AN ACCESSIBLE PEDESTRIAN ROUTE IS MAINTAINED THROUGHOUT CONSTRUCTION.
3. ADDITIONAL WORK MAY BE PERFORMED DURING THIS PHASE THROUGH THE USE OF MASSDOT STANDARD TEMPORARY TRAFFIC CONTROL DETAIL WITH PRIOR APPROVAL FROM THE ENGINEER.
4. IN AREAS SHOWN AS RESTRICTED WORKZONES, VEHICLE ACCESS SHALL BE MAINTAINED AS BEST AS PRACTICAL BY LIMITING DURATIONS AND IMPACTS AS BEST AS PRACTICAL.
5. CONTRACTOR SHALL REMOVE ANY EXISTING PAVEMENT MARKINGS THAT CONFLICT WITH PROPOSED TEMPORARY MARKINGS AND SHALL BAG OR REMOVE SIGNAGE THAT CONFLICTS WITH EXISTING TRAFFIC PATTERNS.
6. ALL PROPOSED CENTER LINES, LANE LINES AND EDGE LINES SHALL BE 6" PAINTED.
7. ALL PROPOSED CROSSWALKS, STOP LINES AND GORE LINES SHALL BE 12" PAINTED.
8. SEE SHEETS 16 - 20 FOR CONSTRUCTION PLAN. SEE SHEETS 39 - 41 FOR ADVANCED SIGNAGE AND TTCP DETAILS.
9. AN EXCAVATION GREATER THAN OR EQUAL TO 4" IN DEPTH MUST BE BACKFILLED WITH A 4:1 SLOPE DURING NON-WORKING HOURS. SEE DETAILS ON SHEET 39 - 41 FOR INFORMATION.
10. POLICE OFFICER DETAIL SHALL BE PROVIDED IN THE GENERAL LOCATION SHOWN ON THE PLAN, WITH THE OFFICER DETERMINING THE EXACT LOCATION.
11. IF ADDITIONAL ACTIVITY AREA IS REQUIRED, THE CONTRACTOR MAY IMPLEMENT ONE-WAY ALTERNATING TRAFFIC WITH APPROVAL FROM THE ENGINEER.

606596_HD(TTCP)_WEST ROT_PH III.DWG Plotted on 30-Mar-2018 2:03 PM

CHATHAM
MAIN STREET (ROUTE 28) FROM
GEORGE RYDER ROAD TO BARN HILL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	48	109
PROJECT FILE NO.	606596		

TEMPORARY TRAFFIC CONTROL PLANS

▾	SIGN
⊓	TYPE III BARRICADE
Ⓟ	POLICE OFFICER DETAIL
⇨	TRAFFIC FLOW
■	UNRESTRICTED WORKZONE
▨	RESTRICTED WORKZONE
●	REFLECTORIZED DRUM
•	REFLECTORIZED CONE
▬	PEDESTRIAN MANAGEMENT GUIDANCE SYSTEM
◀ - - ▶	PEDESTRIAN PATH

PHASE 2, STAGE V - CONSTRUCTION OF MAIN STREET/ROUTE 28/GEORGE RYDER ROAD - ROUNDABOUT

1. THE WORKZONES SHOWN ARE INTENDED TO SUPPORT THE CONSTRUCTION OF THE ROUNDABOUT AT MAIN STREET/ROUTE 28 AT GEORGE RYDER ROAD.
2. ADDITIONAL WORK MAY BE PERFORMED DURING THIS PHASE THROUGH THE USE OF MASSDOT STANDARD TEMPORARY TRAFFIC CONTROL DETAIL WITH PRIOR APPROVAL FROM THE ENGINEER.
3. PRIOR TO STAGE VI WORK, CONTRACTOR SHALL INSTALL FINAL PERMANENT SIGNAGE AND DRUMS IN PLACE OF FINAL PAVEMENT MARKINGS. REFER TO SHEETS 34 - 37.
4. CONTRACTOR SHALL REMOVE ANY EXISTING PAVEMENT MARKINGS THAT CONFLICT WITH PROPOSED TEMPORARY MARKINGS AND SHALL BAG OR REMOVE SIGNAGE THAT CONFLICTS WITH EXISTING TRAFFIC PATTERNS.
5. SEE SHEETS 16 - 20 FOR CONSTRUCTION PLAN. SEE SHEETS 39 - 41 FOR ADVANCED SIGNAGE AND TTCP DETAILS.
7. AN EXCAVATION GREATER THAN OR EQUAL TO 4" IN DEPTH MUST BE BACKFILLED WITH A 4:1 SLOPE DURING NON-WORKING HOURS. SEE DETAILS ON SHEET 39 - 41 FOR INFORMATION.
8. POLICE OFFICER DETAIL SHALL BE PROVIDED IN THE GENERAL LOCATION SHOWN ON THE PLAN, WITH THE OFFICER DETERMINING THE EXACT LOCATION.

606596_HD(TTCP)_WEST ROT_PH IV.DWG Plotted on 30-Mar-2018 2:04 PM

▾	SIGN
⊓	TYPE III BARRICADE
Ⓟ	POLICE OFFICER DETAIL
⇨	TRAFFIC FLOW
▬	UNRESTRICTED WORKZONE
▨	RESTRICTED WORKZONE
•	REFLECTORIZED DRUM
·	REFLECTORIZED CONE
▂	PEDESTRIAN MANAGEMENT GUIDANCE SYSTEM
◄- - -►	PEDESTRIAN PATH

PHASE 2, STAGE VI - CONSTRUCTION OF MAIN STREET/ROUTE 28/GEORGE RYDER ROAD - ROUNDABOUT

1. THE WORKZONES SHOWN ARE INTENDED TO SUPPORT THE CONSTRUCTION OF THE ROUNDABOUT AT MAIN STREET/ROUTE 28 AT GEORGE RYDER ROAD.
2. ADDITIONAL WORK MAY BE PERFORMED DURING THIS PHASE THROUGH THE USE OF MASSDOT STANDARD TEMPORARY TRAFFIC CONTROL DETAIL WITH PRIOR APPROVAL FROM THE ENGINEER.
3. PRIOR TO STAGE VI WORK, CONTRACTOR SHALL INSTALL FINAL PERMANENT SIGNAGE AND DRUMS IN PLACE OF FINAL PAVEMENT MARKINGS. REFER TO SHEETS 34 - 37.
4. IN AREAS SHOWN AS RESTRICTED WORKZONES, VEHICLE ACCESS SHALL BE MAINTAINED AS BEST AS PRACTICAL BY LIMITING DURATIONS AND IMPACTS AS BEST AS PRACTICAL.
5. CONTRACTOR SHALL REMOVE ANY EXISTING PAVEMENT MARKINGS THAT CONFLICT WITH PROPOSED TEMPORARY MARKINGS AND SHALL BAG OR REMOVE SIGNAGE THAT CONFLICTS WITH EXISTING TRAFFIC PATTERNS.
6. SEE SHEETS 16 - 20 FOR CONSTRUCTION PLAN. SEE SHEETS 39 - 41 FOR ADVANCED SIGNAGE AND TTCP DETAILS.
7. AN EXCAVATION GREATER THAN OR EQUAL TO 4" IN DEPTH MUST BE BACKFILLED WITH A 4:1 SLOPE DURING NON-WORKING HOURS. SEE DETAILS ON SHEET 39 - 41 FOR INFORMATION.

CHATHAM
MAIN STREET (ROUTE 28) FROM
GEORGE RYDER ROAD TO BARN HILL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	49	109
PROJECT FILE NO.		606596	

TEMPORARY TRAFFIC CONTROL PLANS

N
1970 TOWN LAYOUT
GEORGE RYDER ROAD
PUBLIC - 40' WIDE
1970 TOWN LAYOUT
1927 STATE HIGHWAY LAYOUT (NO. 2414)
MAIN STREET
PUBLIC - 60' WIDE
PROP MILL & OVERLAY
PROP FULL DEPTH CONSTRUCTION
1927 STATE HIGHWAY LAYOUT (NO. 2414)
MAIN STREET
PUBLIC - 60' WIDE
PROP MILL & OVERLAY
CONTRACTOR SHALL STAGE CONSTRUCTION TO PROVIDE ACCESS TO ALL RESIDENCES AND BUSINESSES DURING CONSTRUCTION (TYP)
1927 STATE HIGHWAY LAYOUT (NO. 2414)
PROP FULL DEPTH CONSTRUCTION
1960 TOWN LAYOUT
SEAQUANSET ROAD
PUBLIC - 35' WIDE
1960 TOWN LAYOUT
PROP TEMP PAVEMENT MARKINGS 4' LINE @ 36' SKIP (TYP)
PROP TEMP EASEMENT (TYP)
ROADWAY MILL AND OVERLAY, AND FINISH ROADWAY BASE WHERE NECESSARY. STAGE CONSTRUCTION SUCH THAT AN ACCESSIBLE ROUTE IS MAINTAINED TO CROSS MAIN STREET AND GEORGE RYDER ROAD (TYP)
TOWN LAYOUT
GEORGE RYDER ROAD
SOUTH
PRIVATE - 33' WIDE
TOWN LAYOUT
0
40
100
200
SCALE: 1" = 40'

Plotted on 30-Mar-2018 2:05 PM

606596_HD(TTCP)_WEST ROT_PH V.DWG

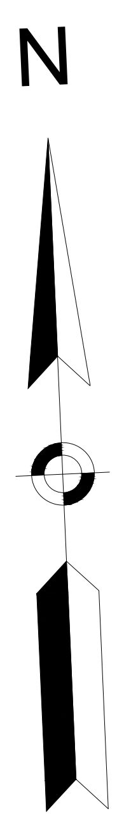
CHATHAM
MAIN STREET (ROUTE 28) FROM
GEORGE RYDER ROAD TO BARN HILL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	50	109
PROJECT FILE NO.	606596		

TEMPORARY TRAFFIC CONTROL PLANS

Plotted on 30-Mar-2018 2:06 PM

606596_HD(TTCP)_EAST ROT_PH IA.DWG



▾	SIGN
⊓	TYPE III BARRICADE
Ⓟ	POLICE OFFICER DETAIL
⇨	TRAFFIC FLOW
▩	UNRESTRICTED WORKZONE
▨	RESTRICTED WORKZONE
●	REFLECTORIZED DRUM
·	REFLECTORIZED CONE
▬	PEDESTRIAN MANAGEMENT GUIDANCE SYSTEM
◄ – – ►	PEDESTRIAN PATH

PHASE 3, STAGE I - CONSTRUCTION OF MAIN STREET/ROUTE 28/BARN HILL ROAD - SOUTHWEST CORNER

1. THE WORKZONES SHOWN ARE INTENDED TO SUPPORT THE RECONSTRUCTION OF MAIN STREET/ROUTE 28/BARN HILL ROAD INCLUDING BUT NOT LIMITED TO SIDEWALKS, WHEELCHAIR RAMPS, CURBING, LANDSCAPING, HARDSCAPING, ROADWAY BASE, DRIVEWAYS AND UTILITIES.
2. UPON COMPLETION OF THIS STAGE OF WORK THE EDGE OF THE ROADWAY SHALL BE RE-GRADED AS NECESSARY TO COMPLEMENT THE CONSTRUCTION
3. ADDITIONAL WORK MAY BE PERFORMED DURING THIS PHASE THROUGH THE USE OF MASSDOT STANDARD TEMPORARY TRAFFIC CONTROL DETAIL WITH PRIOR APPROVAL FROM THE ENGINEER.
4. IN AREAS SHOWN AS RESTRICTED WORKZONES, VEHICLE ACCESS SHALL BE MAINTAINED AS BEST AS PRACTICAL BY LIMITING DURATIONS AND IMPACTS AS BEST AS PRACTICAL.
5. CONTRACTOR SHALL REMOVE ANY EXISTING PAVEMENT MARKINGS THAT CONFLICT WITH PROPOSED TEMPORARY MARKINGS AND SHALL BAG OR REMOVE SIGNAGE THAT CONFLICTS WITH EXISTING TRAFFIC PATTERNS.
6. ALL PROPOSED CENTER LINES, LANE LINES AND EDGE LINES SHALL BE 6" PAINTED.
7. ALL PROPOSED CROSSWALKS, STOP LINES AND GORE LINES SHALL BE 12" PAINTED.
8. SEE SHEETS 16 - 20 FOR CONSTRUCTION PLAN.
9. AN EXCAVATION GREATER THAN OR EQUAL TO 4" IN DEPTH MUST BE BACKFILLED WITH A 4:1 SLOPE DURING NON-WORKING HOURS. SEE DETAILS ON SHEET 39 - 41 FOR INFORMATION.
10. POLICE OFFICER DETAIL SHALL BE PROVIDED IN THE GENERAL LOCATION SHOWN ON THE PLAN, WITH THE OFFICER DETERMINING THE EXACT LOCATION.
11. FOR SPECIFICATION OF PEDESTRIAN MANAGEMENT GUIDANCE SYSTEM AND TEMPORARY WHEELCHAIR RAMPS, REFER TO SPECIAL PROVISION ITEM NUMBERS 657.1, 657.11 AND 855.

CONSTRUCT SIDEWALK, WHEELCHAIR RAMPS, CURBING, LANDSCAPING, HARDSCAPING ROADWAY BASE, DRIVEWAYS AND UTILITIES. RE-GRADE ROADWAY WHERE NECESSARY TO MATCH EX ROADWAY TO INSTALLED FEATURES (TYP)

CONTRACTOR SHALL STAGE CONSTRUCTION TO PROVIDE ACCESS TO ALL RESIDENCES AND BUSINESSES DURING CONSTRUCTION (TYP)

POLICE DETAILS SHALL BE UTILIZED TO DIRECT TRAFFIC IN AREAS WHERE 11'-LANE WIDTHS CANNOT BE ACHIEVED IN BOTH DIRECTIONS WITHIN THE EXISTING ROADWAY CROSS SECTION AND FOR SHORT DISTANCES (TYP)

ACCESSIBLE PATH BEYOND HESS DRIVEWAY SHALL BE RESTORED AT THE COMPLETION OF EACH WORK DAY. POLICE DETAIL SHALL PROVIDE ASSISTANCE TO PEDESTRIANS AROUND WORKZONE WHILE ACTIVE.

N

▾	SIGN
⊓	TYPE III BARRICADE
Ⓟ	POLICE OFFICER DETAIL
⇨	TRAFFIC FLOW
▩	UNRESTRICTED WORKZONE
▨	RESTRICTED WORKZONE
●	REFLECTORIZED DRUM
•	REFLECTORIZED CONE
▲	PEDESTRIAN MANAGEMENT GUIDANCE SYSTEM
◀– – ▶	PEDESTRIAN PATH

PHASE 3, STAGE II - CONSTRUCTION OF MAIN STREET/ROUTE 28/BARN HILL ROAD - SOUTHEAST CORNER

1. THE WORKZONES SHOWN ARE INTENDED TO SUPPORT THE RECONSTRUCTION OF MAIN STREET/ROUTE 28/BARN HILL ROAD INCLUDING BUT NOT LIMITED TO SIDEWALKS, WHEELCHAIR RAMPS, CURBING, LANDSCAPING, HARDSCAPING, ROADWAY BASE, DRIVEWAYS AND UTILITIES.
2. UPON COMPLETION OF THIS STAGE OF WORK THE EDGE OF THE ROADWAY SHALL BE RE-GRADED AS NECESSARY TO COMPLEMENT THE CONSTRUCTION.
3. ADDITIONAL WORK MAY BE PERFORMED DURING THIS PHASE THROUGH THE USE OF MASSDOT STANDARD TEMPORARY TRAFFIC CONTROL DETAIL WITH PRIOR APPROVAL FROM THE ENGINEER.
4. IN AREAS SHOWN AS RESTRICTED WORKZONES, VEHICLE ACCESS SHALL BE MAINTAINED AS BEST AS PRACTICAL BY LIMITING DURATIONS AND IMPACTS AS BEST AS PRACTICAL.
5. CONTRACTOR SHALL REMOVE ANY EXISTING PAVEMENT MARKINGS THAT CONFLICT WITH PROPOSED TEMPORARY MARKINGS AND SHALL BAG OR REMOVE SIGNAGE THAT CONFLICTS WITH EXISTING TRAFFIC PATTERNS.
6. ALL PROPOSED CENTER LINES, LANE LINES AND EDGE LINES SHALL BE 6" PAINTED.
7. ALL PROPOSED CROSSWALKS, STOP LINES AND GORE LINES SHALL BE 12" PAINTED.
8. SEE SHEETS 16 - 20 FOR CONSTRUCTION PLAN.
9. AN EXCAVATION GREATER THAN OR EQUAL TO 4" IN DEPTH MUST BE BACKFILLED WITH A 4:1 SLOPE DURING NON-WORKING HOURS. SEE DETAILS ON SHEET 39 - 41 FOR INFORMATION.
10. POLICE OFFICER DETAIL SHALL BE PROVIDED IN THE GENERAL LOCATION SHOWN ON THE PLAN, WITH THE OFFICER DETERMINING THE EXACT LOCATION.

CHATHAM
MAIN STREET (ROUTE 28) FROM GEORGE RYDER ROAD TO BARN HILL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	51	109
PROJECT FILE NO. 606596			

TEMPORARY TRAFFIC CONTROL PLANS

Plotted on 30-Mar-2018 2:07 PM

606596_HD(TTCP)_EAST ROT_PH IB.DWG

CHATHAM
MAIN STREET (ROUTE 28) FROM
GEORGE RYDER ROAD TO BARN HILL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	52	109
PROJECT FILE NO.	606596		

TEMPORARY TRAFFIC CONTROL PLANS

▾	SIGN
⊓	TYPE III BARRICADE
Ⓟ	POLICE OFFICER DETAIL
⇨	TRAFFIC FLOW
■	UNRESTRICTED WORKZONE
▨	RESTRICTED WORKZONE
●	REFLECTORIZED DRUM
•	REFLECTORIZED CONE
▬	PEDESTRIAN MANAGEMENT GUIDANCE SYSTEM
←‑ ‑ →	PEDESTRIAN PATH

PHASE 3, STAGE III - CONSTRUCTION OF MAIN STREET/ROUTE 28/BARN HILL ROAD - NORTH SIDE

1. THE WORKZONES SHOWN ARE INTENDED TO SUPPORT THE RECONSTRUCTION OF MAIN STREET/ROUTE 28/BARN HILL ROAD INCLUDING BUT NOT LIMITED TO SIDEWALKS, WHEELCHAIR RAMPS, CURBING, LANDSCAPING, HARDSCAPING, ROADWAY BASE, DRIVEWAYS AND UTILITIES.
2. UPON COMPLETION OF THIS STAGE OF WORK THE EDGE OF THE ROADWAY SHALL BE RE-GRADED AS NECESSARY TO COMPLEMENT THE CONSTRUCTION.
3. ADDITIONAL WORK MAY BE PERFORMED DURING THIS PHASE THROUGH THE USE OF MASSDOT STANDARD TEMPORARY TRAFFIC CONTROL DETAIL WITH PRIOR APPROVAL FROM THE ENGINEER.
4. IN AREAS SHOWN AS RESTRICTED WORKZONES, VEHICLE ACCESS SHALL BE MAINTAINED AS BEST AS PRACTICAL BY LIMITING DURATIONS AND IMPACTS AS BEST AS PRACTICAL.
5. CONTRACTOR SHALL REMOVE ANY EXISTING PAVEMENT MARKINGS THAT CONFLICT WITH PROPOSED TEMPORARY MARKINGS AND SHALL BAG OR REMOVE SIGNAGE THAT CONFLICTS WITH EXISTING TRAFFIC PATTERNS.
6. ALL PROPOSED CENTER LINES, LANE LINES AND EDGE LINES SHALL BE 6" PAINTED.
7. ALL PROPOSED CROSSWALKS, STOP LINES AND GORE LINES SHALL BE 12" PAINTED.
8. SEE SHEETS 16 - 20 FOR CONSTRUCTION PLAN.
9. AN EXCAVATION GREATER THAN OR EQUAL TO 4" IN DEPTH MUST BE BACKFILLED WITH A 4:1 SLOPE DURING NON-WORKING HOURS. SEE DETAILS ON SHEET 39 - 41 FOR INFORMATION.
10. POLICE OFFICER DETAIL SHALL BE PROVIDED IN THE GENERAL LOCATION SHOWN ON THE PLAN, WITH THE OFFICER DETERMINING THE EXACT LOCATION.
11. FOR SPECIFICATION OF PEDESTRIAN MANAGEMENT GUIDANCE SYSTEM AND TEMPORARY WHEELCHAIR RAMPS, REFER TO SPECIAL PROVISION ITEM NUMBERS 657.1, 657.11 AND 855.

CONSTRUCT SIDEWALK, WHEELCHAIR RAMPS, CURBING, LANDSCAPING, HARDSCAPING, ROADWAY BASE, DRIVEWAYS AND UTILITIES. RE-GRADE ROADWAY WHERE NECESSARY TO MATCH EX ROADWAY TO INSTALLED FEATURES (TYP)

CONTRACTOR SHALL STAGE CONSTRUCTION TO PROVIDE ACCESS TO ALL RESIDENCES AND BUSINESSES DURING CONSTRUCTION (TYP)

POLICE DETAIL TO ASSIST WITH PEDESTRIAN CROSSING. SIDEWALK SHALL BE REOPENED AT THE END OF EACH WORK DAY DURING CONSTRUCTION.

SCALE: 1" = 40'

N

▾	SIGN
⊓	TYPE III BARRICADE
Ⓟ	POLICE OFFICER DETAIL
⇨	TRAFFIC FLOW
▬	UNRESTRICTED WORKZONE
▨	RESTRICTED WORKZONE
•	REFLECTORIZED DRUM
·	REFLECTORIZED CONE
▟▙	PEDESTRIAN MANAGEMENT GUIDANCE SYSTEM
◀– – ▶	PEDESTRIAN PATH

PHASE 3, STAGE IV - CONSTRUCTION OF MAIN STREET/ROUTE 28/BARN HILL ROAD - MEDIANS

1. THE WORKZONES SHOWN ARE INTENDED TO SUPPORT THE CONSTRUCTION OF THE SPLITTER ISLANDS AT MAIN STREET/ROUTE 28/BARN HILL ROAD.
2. ADDITIONAL WORK MAY BE PERFORMED DURING THIS PHASE THROUGH THE USE OF MASSDOT STANDARD TEMPORARY TRAFFIC CONTROL DETAIL WITH PRIOR APPROVAL FROM THE ENGINEER.
3. CONTRACTOR SHALL REMOVE ANY EXISTING PAVEMENT MARKINGS THAT CONFLICT WITH PROPOSED TEMPORARY MARKINGS AND SHALL BAG OR REMOVE SIGNAGE THAT CONFLICTS WITH EXISTING TRAFFIC PATTERNS.
4. ALL PROPOSED CENTER LINES, LANE LINES AND EDGE LINES SHALL BE 6" PAINTED.
5. ALL PROPOSED CROSSWALKS, STOP LINES AND GORE LINES SHALL BE 12" PAINTED.
6. SEE SHEETS 16 - 20 FOR CONSTRUCTION PLAN.
7. AN EXCAVATION GREATER THAN OR EQUAL TO 4" IN DEPTH MUST BE BACKFILLED WITH A 4:1 SLOPE DURING NON-WORKING HOURS. SEE DETAILS ON SHEET 39 - 41 FOR INFORMATION.
8. IF ADDITIONAL ACTIVITY AREA IS REQUIRED, THE CONTRACTOR MAY IMPLEMENT ONE-WAY ALTERNATING TRAFFIC WITH APPROVAL FROM THE ENGINEER.

CHATHAM
MAIN STREET (ROUTE 28) FROM
GEORGE RYDER ROAD TO BARN HILL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	53	109
PROJECT FILE NO. 606596			

TEMPORARY TRAFFIC CONTROL PLANS

Plotted on 30-Mar-2018 2:09 PM

606596_HD(TTCP)_EAST ROT_PH III.DWG

CHATHAM
MAIN STREET (ROUTE 28) FROM GEORGE RYDER ROAD TO BARN HILL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	54	109
PROJECT FILE NO.	606596		

TEMPORARY TRAFFIC CONTROL PLANS

606596_HD(TTCP)_EAST ROT_PH IV.DWG   Plotted on 30-Mar-2018 2:10 PM

N

▾	SIGN
⊓	TYPE III BARRICADE
Ⓟ	POLICE OFFICER DETAIL
⇨	TRAFFIC FLOW
▬	UNRESTRICTED WORKZONE
▨	RESTRICTED WORKZONE
●	REFLECTORIZED DRUM
·	REFLECTORIZED CONE
▟	PEDESTRIAN MANAGEMENT GUIDANCE SYSTEM
⟵ – – ⟶	PEDESTRIAN PATH

PHASE 3, STAGE V - CONSTRUCTION OF MAIN STREET/ROUTE 28/BARN HILL ROAD - ROUNDABOUT

1. THE WORKZONES SHOWN ARE INTENDED TO SUPPORT THE CONSTRUCTION OF THE ROUNDABOUT AT MAIN STREET/ROUTE 28/BARN HILL ROAD.
2. ADDITIONAL WORK MAY BE PERFORMED DURING THIS PHASE THROUGH THE USE OF MASSDOT STANDARD TEMPORARY TRAFFIC CONTROL DETAIL WITH PRIOR APPROVAL FROM THE ENGINEER.
3. PRIOR TO STAGE VI WORK, CONTRACTOR SHALL INSTALL FINAL SIGNAGE AND DRUMS IN PLACE OF FINAL PAVEMENT MARKINGS. REFER TO SHEETS 34 - 37.
4. CONTRACTOR SHALL REMOVE ANY EXISTING PAVEMENT MARKINGS THAT CONFLICT WITH PROPOSED TEMPORARY MARKINGS AND SHALL BAG OR REMOVE SIGNAGE THAT CONFLICTS WITH EXISTING TRAFFIC PATTERNS.
5. SEE SHEETS 16 - 20 FOR CONSTRUCTION PLAN.
6. AN EXCAVATION GREATER THAN OR EQUAL TO 4" IN DEPTH MUST BE BACKFILLED WITH A 4:1 SLOPE DURING NON-WORKING HOURS. SEE DETAILS ON SHEET 39 - 41 FOR INFORMATION.

CHATHAM
MAIN STREET (ROUTE 28) FROM
GEORGE RYDER ROAD TO BARN HILL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	55	109
PROJECT FILE NO.	606596		

TEMPORARY TRAFFIC CONTROL PLANS

▾	SIGN
⊓	TYPE III BARRICADE
Ⓟ	POLICE OFFICER DETAIL
⇨	TRAFFIC FLOW
▆	UNRESTRICTED WORKZONE
▨	RESTRICTED WORKZONE
•	REFLECTORIZED DRUM
·	REFLECTORIZED CONE
▟▙	PEDESTRIAN MANAGEMENT GUIDANCE SYSTEM
◄– – –►	PEDESTRIAN PATH

PHASE 3, STAGE VI - CONSTRUCTION OF MAIN STREET/ROUTE 28/BARN HILL ROAD - ROUNDABOUT

1. THE WORKZONES SHOWN ARE INTENDED TO SUPPORT THE CONSTRUCTION OF THE ROUNDABOUT AT MAIN STREET/ROUTE 28/BARN HILL ROAD.
2. ADDITIONAL WORK MAY BE PERFORMED DURING THIS PHASE THROUGH THE USE OF MASSDOT STANDARD TEMPORARY TRAFFIC CONTROL DETAIL WITH PRIOR APPROVAL FROM THE ENGINEER.
3. IN AREAS SHOWN AS RESTRICTED WORKZONES, VEHICLE ACCESS SHALL BE MAINTAINED AS BEST AS PRACTICAL BY LIMITING DURATIONS AND IMPACTS AS BEST AS PRACTICAL.
4. PRIOR TO STAGE VI WORK, CONTRACTOR SHALL INSTALL FINAL SIGNAGE AND DRUMS IN PLACE OF FINAL PAVEMENT MARKINGS. REFER TO SHEETS 34 - 37.
5. CONTRACTOR SHALL REMOVE ANY EXISTING PAVEMENT MARKINGS THAT CONFLICT WITH PROPOSED TEMPORARY MARKINGS AND SHALL BAG OR REMOVE SIGNAGE THAT CONFLICTS WITH EXISTING TRAFFIC PATTERNS.
6. SEE SHEETS 16 - 20 FOR CONSTRUCTION PLAN.
7. AN EXCAVATION GREATER THAN OR EQUAL TO 4" IN DEPTH MUST BE BACKFILLED WITH A 4:1 SLOPE DURING NON-WORKING HOURS. SEE DETAILS ON SHEET 39 - 41 FOR INFORMATION.

N
WHELDON WAY
PRIVATE - 33' WIDE
CONTRACTOR SHALL STAGE CONSTRUCTION TO PROVIDE ACCESS TO ALL RESIDENCES AND BUSINESSES DURING CONSTRUCTION (TYP)
1927 STATE HIGHWAY LAYOUT (NO. 2414)
MAIN STREET
PUBLIC - 60' WIDE
1927 STATE HIGHWAY LAYOUT (NO. 2414)
1927 STATE HIGHWAY LAYOUT (NO. 2414)
PROP FULL DEPTH CONSTRUCTION
PROP MILL & OVERLAY (SEE NOTE 2)
MAIN STREET PUBLIC - 60' WIDE
1927 STATE HIGHWAY LAYOUT (NO. 2414)
PROP FULL DEPTH CONSTRUCTION
PROP MILL & OVERLAY
PROP TEMP EASEMENT (TYP)
ROADWAY MILL AND OVERLAY, AND FINISH FULL DEPTH CONSTRUCTION. STAGE CONSTRUCTION SUCH THAT AN ACCESSIBLE ROUTE IS MAINTAINED TO CROSS MAIN STREET AND BARN HILL ROAD (TYP)
PROP TEMP PAVEMENT MARKINGS 4' LINE @ 36' SKIP (TYP)
1958 TOWN LAYOUT
BARN HILL ROAD
PUBLIC - 40' WIDE
1958 TOWN LAYOUT
0
40
100
200
SCALE: 1" = 40'

606596_HD(TTCP)_EAST ROT_PH V.DWG Plotted on 30-Mar-2018 2:11 PM

CHATHAM
MAIN STREET (ROUTE 28) FROM
GEORGE RYDER ROAD TO BARN HILL ROAD

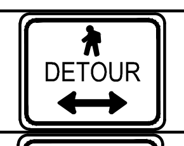
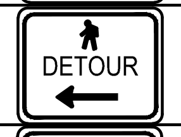
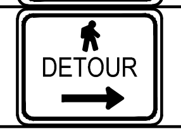
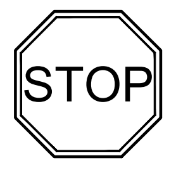
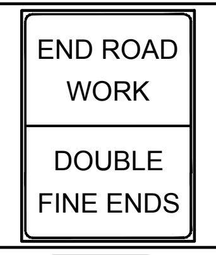
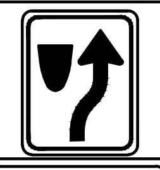
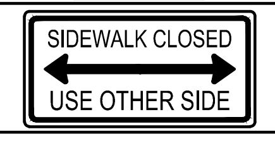
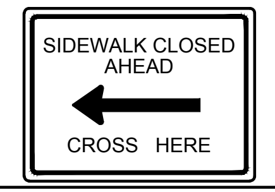
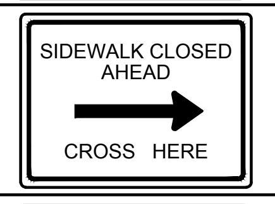
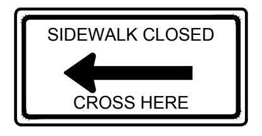
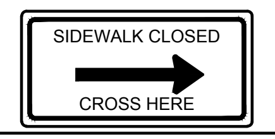
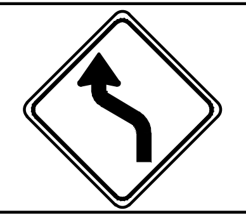
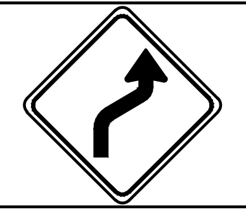
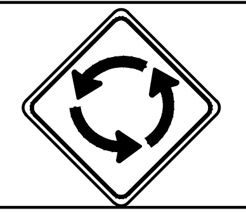
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	56	109
PROJECT FILE NO.	606596		

TEMPORARY TRAFFIC CONTROL PLANS

Plotted on 30-Mar-2018 2:11 PM

606596_TR(TTCP DETAILS).DWG

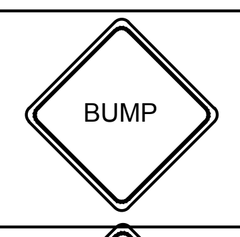
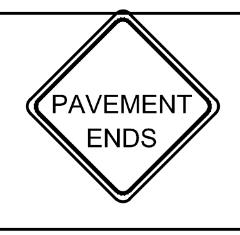
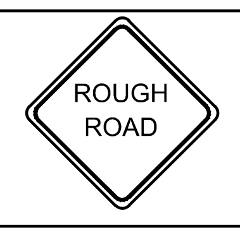
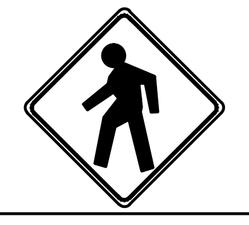
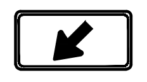
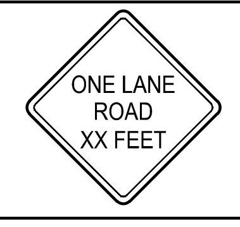
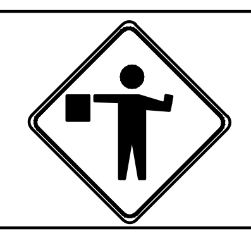
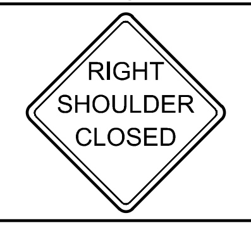
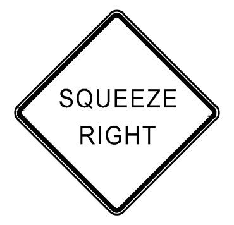
TEMPORARY TRAFFIC CONTROL SIGN SUMMARY

IDENTIFICATION NUMBER	SIZE OF SIGN (IN)		TEXT	TEXT DIMENSIONS (INCHES)	NUMBER OF SIGNS REQUIRED	COLOR			UNIT AREA (S.F.)	AREA IN SQUARE FEET
	WIDTH	HEIGHT		LETTER HEIGHT		BACKGROUND	LEGEND	BORDER		
M4-9b	30	24		①	1	①	①	①	5.00	5.00
M4-9bL	30	24			1				5.00	5.00
M4-9bR	30	24			1				5.00	5.00
R1-1	30	30			1				6.25	6.25
R2-10a	48	36		②	7	②	②	②	12.00	84.00
R2-10e	36	48			7				12.00	84.00
R4-7	24	30		①	4	①	①	①	5.00	20.00
R9-8	36	18			2				4.50	9.00
R9-9	24	12			2				2.00	4.00
R9-9(MOD)	24	12			2				2.00	4.00
R9-10	24	12			2				2.00	4.00
R9-11L	24	18			1				3.00	3.00
R9-11R	24	18			1				3.00	3.00
R9-11aL	24	12			1				2.00	2.00
R9-11aR	24	12			1				2.00	2.00
W1-4L	36	36			2				9.00	18.00
W1-4R	36	36			2				9.00	18.00
W2-6	30	30			3				6.25	18.75
W5-1	36	36			4				9.00	36.00

① SEE MUTCD 2009 EDITION, 1979 STD. HWY. SIGNS AND SECTION M9.30.0. TYPE III OF THE MHD STANDARD SPECIFICATION FOR TEXT DIMENSIONS AND COLOR. BACKGROUND SHEETING FOR ALL CONSTRUCTION WARNING SIGNS SHALL BE OF A FLUORESCENT ORANGE COLOR PER MASSDOT SUPPLEMENTAL SPECIFICATIONS DATED JUNE 15, 2012 SECTION 850.43.

② MASSDOT STANDARD SIGN.

TEMPORARY TRAFFIC CONTROL SIGN SUMMARY

IDENTIFICATION NUMBER	SIZE OF SIGN (IN)		TEXT	TEXT DIMENSIONS (INCHES)	NUMBER OF SIGNS REQUIRED	COLOR			UNIT AREA (S.F.)	AREA IN SQUARE FEET
	WIDTH	HEIGHT		LETTER HEIGHT		BACKGROUND	LEGEND	BORDER		
W8-1	36	36		①	1	①	①	①	9.00	9.00
W8-3	36	36			1				9.00	9.00
W8-8	36	36			1				9.00	9.00
W11-2	36	36			6				9.00	54.00
W16-7pL	24	12			6				2.00	12.00
W16-9p	24	12			2				2.00	4.00
W20-1	36	36			7				9.00	63.00
W20-4	36	36			4				9.00	36.00
W20-7	36	36			2				9.00	18.00
W21-5a	36	36			1				9.00	9.00
W20-7b	36	36		②	4	②	②	②	9.00	36.00
W30-8R	36	36			4				9.00	36.00

① SEE MUTCD 2009 EDITION, 1979 STD. HWY. SIGNS AND SECTION M9.30.0. TYPE III OF THE MHD STANDARD SPECIFICATION FOR TEXT DIMENSIONS AND COLOR. BACKGROUND SHEETING FOR ALL CONSTRUCTION WARNING SIGNS SHALL BE OF A FLUORESCENT ORANGE COLOR PER MASSDOT SUPPLEMENTAL SPECIFICATIONS DATED JUNE 15, 2012 SECTION 850.43.

② MASSDOT STANDARD SIGN.

CHATHAM
MAIN STREET (ROUTE 28) FROM GEORGE RYDER ROAD TO BARN HILL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	57	109
PROJECT FILE NO.	606596		

UTILITY PLANS

606596_HD(UTILITY PLAN).DWG   Plotted on 30-Mar-2018 2:12 PM

DRAINAGE STRUCTURE DATA

NO.	TYPE	STATION	RIM ELEV.	INVERT IN	INVERT OUT	REMARKS
1	CBCI	103+91 24.8' RT	39.63	-	36.90	DEEP SUMP CATCH BASIN
1A	CB	102+59 31.4' LT	40.57	-	37.60	DEEP SUMP CATCH BASIN
1B	CBCI	103+35 17.3' RT	40.21	-	37.70	DEEP SUMP CATCH BASIN
2	CB	103+82 20.1' LT	39.70	-	37.05	DEEP SUMP CATCH BASIN
2A	CBCI	103+62 18.6' LT	39.91	-	36.90	DEEP SUMP CATCH BASIN WITH OFFSET COVER TO AVOID 12" WATER MAIN
3	DMH	103+89 9.3' RT	39.94	(1) 36.85 (2) 36.75 (3A) 36.60	36.50	-
3A	DMH	103+64 0'	40.26	(1B) 37.55 (2A) 36.80	36.70	-
6	GICI	301+89 16.9" LT	37.74	-	35.25	GUTTER INLET
6A	GICI	301+63 16.9' LT	37.86	-	35.35	GUTTER INLET
6C	CB	301+84 20.7' LT	38.87	(6) 35.15 (6A) 35.25	34.35	DEEP SUMP CATCH BASIN W/ MANHOLE FRAME & COVER
7	CB	301+89 14.7' RT	37.80	-	34.20	DEEP SUMP CATCH BASIN
7A	CBCI	301+43 17.0' RT	38.10	-	34.95	DEEP SUMP CATCH BASIN
7B	DMH	301+80 25.0' RT	37.92	(6C) 33.95 (7) 33.95	33.85	-
8	DMH	301+47 25.7' RT	38.60	(7A) 34.85 (7B) 33.55 (11) 33.20	33.10	-
9	LB	301+30 26.1' RT	38.91	33.00	32.90	LEACHING BASIN
10	LB	301+19 26.7' RT	39.15	32.80	-	LEACHING BASIN
12	LB	105+21 57.4' LT	40.34	34.60	34.60	LEACHING BASIN
12A	LB	105+32 50.0' LT	40.45	34.60	34.60	LEACHING BASIN
12D	LB	105+18 44.2' LT	40.77	34.60	-	LEACHING BASIN
13	LB	105+17 68.1' LT	38.72	34.60	34.60	LEACHING BASIN
15	LB	105+42 67.6' LT	39.24	34.60	-	LEACHING BASIN
16	LB	105+45 57.3' LT	39.42	34.60	34.60	LEACHING BASIN
17	LB	105+48 46.9' LT	40.07	(19D)34.60	34.60	LEACHING BASIN
19	DMH	105+74 8.1' LT	39.73	(19A)35.80 (21A)35.60 (22)35.00	34.90	-

DRAINAGE STRUCTURE DATA

NO.	TYPE	STATION	RIM ELEV.	INVERT IN	INVERT OUT	REMARKS
19A	DMH	105+59 7.9' RT	39.76	(19B) 37.05 (21) 36.85	35.55	-
19B	CBCI	105+45 16.1' RT	39.67	-	37.15	DEEP SUMP CATCH BASIN
19C	CBCI	105+47 17.0' LT	39.67	-	36.25	DEEP SUMP CATCH BASIN
19D	DMH	105+55 20.6' LT	40.10	(19) 34.80 (19C) 36.00 (20) 35.60	34.70	-
20	CBCI	105+75 17.8' LT	39.54	-	36.00	DEEP SUMP CATCH BASIN OFFSET COVER TO AVOID 8" SEWER
20A	CB	101+41 36.8' RT	39.42	-	(EX)	DEEP SUMP CATCH BASIN WITH OFFSET COVER TO AVOID 8" WATERMAIN
21	CBCI	105+75 17.9' RT	39.54	-	37.00	DEEP SUMP CATCH BASIN OFFSET COVER TO AVOID EXIST. VERIZON DUCT BANK

DRAINAGE STRUCTURE DATA

NO.	TYPE	STATION	RIM ELEV.	INVERT IN	INVERT OUT	REMARKS
21A	DMH	104+75 12.0' RT	41.70	(3)36.10 (21B)37.40	36.00	-
21B	CBCI	104+97 46.2' RT	40.13	-	37.60	DEEP SUMP CATCH BASIN
58	CB	601+12 8.0' RT	39.68	-	36.50	DEEP SUMP CATCH BASIN
59	DMH	601+02 4.0' LT	39.93	(58) 36.35	36.25	-
60	LB	600+85 14.0' RT	39.64	36.10	-	LEACHING BASIN
12B	LB	105+05 52.8' LT	40.66	34.60	-	LEACHING BASIN
12C	LB	104+97 63.1' LT	40.41	34.60	-	LEACHING BASIN

GENERAL NOTES:
CONTRACTOR TO REMOVE EXISTING 4" BS GAS MAIN AND LATERALS, AND EXISTING 6 & 8 - 4" TELEPHONE CONDUIT'S FROM STATION 103+00 TO 108+00 AND FROM STATION 114+50 TO 119+00.

CHATHAM
MAIN STREET (ROUTE 28) FROM
GEORGE RYDER ROAD TO BARN HILL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	58	109
PROJECT FILE NO.	606596		

UTILITY PLANS

DRAINAGE STRUCTURE DATA

NO.	TYPE	STATION	RIM ELEV.	INVERT IN	INVERT OUT	REMARKS
22	DMH	107+17 8.5' LT	42.13	(22A) 39.30 (24) 39.30 (25) 38.30	38.20	-
22A	CB	107+23 12.6' LT	42.17	39.50	39.40	DEEP SUMP CATCH BASIN W/ MANHOLE FRAME & COVER
23	GICI	107+40 15.0' LT	42.49	-	39.99	GUTTER INLET
24	CBCI	107+28 15.0' RT	42.23	-	39.70	DEEP SUMP CATCH BASIN OFFSET COVER TO AVOID VERIZON DUCT BANK
25	DMH	108+66 6.5' LT	45.35	41.30	41.20	-
26	CBCI	108+80 15.5' RT	45.62	-	43.10	DEEP SUMP CATCH BASIN
27	GICI	108+96 15.2' LT	46.00	-	43.00	GUTTER INLET
27A	CB	108+83 21.4' LT	46.26	42.90	42.80	DEEP SUMP CATCH BASIN W/ MANHOLE FRAME & COVER
28	DMH	108+78 25.8' LT	46.20	(26) 42.95 (27A) 42.70	(25) 42.50 (29) 42.50	5.0 FT DIAMETER DMH WEIR WALL ELEV.= 43.25
29	LB	108+92 24.7' LT	46.51	42.40	42.30	LEACHING BASIN
30	LB	109+04 25.0' LT	46.73	42.20	-	LEACHING BASIN
31	DMH	110+62 4.8' LT	49.58	45.30	45.20	-
32	CBCI	110+20 15.0' RT	48.67	-	46.15	DEEP SUMP CATCH BASIN
33	GICI	110+41 15.2' LT	49.04	-	46.04	GUTTER INLET
33A	CB	110+40 20.3' LT	49.57	45.94	45.84	DEEP SUMP CATCH BASIN W/ MANHOLE FRAME & COVER
34	DMH	110+39 24.9' LT	49.65	(32) 45.75 (33A) 45.65	(35) 45.45 (31) 45.45	5.0 FT DIAMETER DMH WEIR WALL ELEV.= 46.20
35	LB	110+31 24.4' LT	49.45	45.35	45.25	LEACHING BASIN
36	LB	110+15 24.5' LT	49.61	45.15	-	LEACHING BASIN
36A	DMH	112+17 5.8' LT	50.66	44.45	44.35	-

606596_HD(UTILITY PLAN).DWG   Plotted on 30-Mar-2018 2:12 PM

CHATHAM
MAIN STREET (ROUTE 28) FROM GEORGE RYDER ROAD TO BARN HILL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	59	109
PROJECT FILE NO.	606596		

UTILITY PLANS

Plotted on 30-Mar-2018 2:13 PM

606596_HD(UTILITY PLAN).DWG

MAIN STREET STA 115+19.81 =
BARN HILL ROUNDABOUT STA 401+52.86
N 2712959.375
E 1068129.423

MAIN STREET STA 115+47.82 =
BARN HILL ROAD STA 200+00.00
N 2712949.277
E 1068155.539

MAIN STREET STA 115+75.94 =
BARN HILL ROUNDABOUT STA 400+58.43
N 2712945.428
E 1068183.273

BARN HILL ROAD STA 200+28.00 =
BARN HILL ROUNDABOUT STA 400+91.76
N 2712922.096
E 1068162.260

CONTINUED ON SHEET NO. 58

CONTINUED ON SHEET NO. 60

0 20 50 100

SCALE: 1" = 20'

DRAINAGE STRUCTURE DATA

NO.	TYPE	STATION	RIM ELEV.	INVERT IN	INVERT OUT	REMARKS
37	CBCI	114+16 18.5' RT	49.45	-	47.00	DEEP SUMP CATCH BASIN
37A	CBCI	113+95 17.9' RT	49.51	-	47.00	DEEP SUMP CATCH BASIN
37B	DMH	114+08 16.3' RT	49.52	(37) 46.85 (37A) 46.85	46.75	-
38	CBCI	114+16 16.1' LT	49.46	-	46.60	DEEP SUMP CATCH BASIN OFFSET COVER TO AVOID 8" SEWER
38A	DMH	114+26 7.0' LT	49.67	(36A) 43.30 (39) 45.70 (37B) 46.35	43.20	-
39	DMH	114+21 25.4' LT	50.09	(41) 46.45 (38) 46.50	(40) 45.80 (38A) 45.90	5' DIA MANHOLE WEIR WALL ELEV. = 46.75
40	LB	114+08 26.0' LT	50.09	45.70	-	LEACHING BASIN
41	CBCI	113+99 16.2' LT	49.49	-	46.65	DEEP SUMP CATCH BASIN OFFSET COVER TO AVOID 8" SEWER
42	CBCI	115+15 33.3' RT	50.69	-	46.60	DEEP SUMP CATCH BASIN
43	DMH	115+41 14.4' RT	51.62	(42) 44.00 (EX.) 42.99	(EX.) 42.98	-
44	CBCI	116+41 16.2' RT	50.42	-	47.90	DEEP SUMP CATCH BASIN OFFSET COVER TO AVOID VERIZON DUCT BANK
44A	CBCI	116+16 17.0' RT	50.57	-	48.05	DEEP SUMP CATCH BASIN
44B	DMH	116+39 0'	51.27	(44) 47.75 (44A) 47.80	47.65	-
45	CBCI	116+41 17.9' LT	50.42	-	47.30	DEEP SUMP CATCH BASIN OFFSET COVER TO AVOID 8" SEWER
45A	CBCI	116+20 19.9' LT	50.52	-	47.20	DEEP SUMP CATCH BASIN
46	DMH	116+35 17.0' LT	50.45	(44B) 47.55 (45) 47.15	(47) 47.10 (49) 47.10	5' DIA MANHOLE WEIR WALL ELEV. = 47.85
47	LB	116+43 35.2' LT	51.12	47.00	46.90	LEACHING BASIN
48	LB	116+33 36.7' LT	51.16	46.80	-	LEACHING BASIN
49	DMH	116+20 36.6' LT	51.14	(46) 46.80 (45A) 46.80	46.70	-
50	DMH	201+51 10.6' RT	48.75	(EX) 43.28 (56) 44.60	(EX) 43.27	CHANGE IN TYPE
51	CB	202+10 8.8' LT	48.29		45.80	DEEP SUMP CATCH BASIN
52	CBCI	202+10 9.7' RT	48.28	-	45.00	DEEP SUMP CATCH BASIN OFFSET COVER TO AVOID 8" WATER MAIN

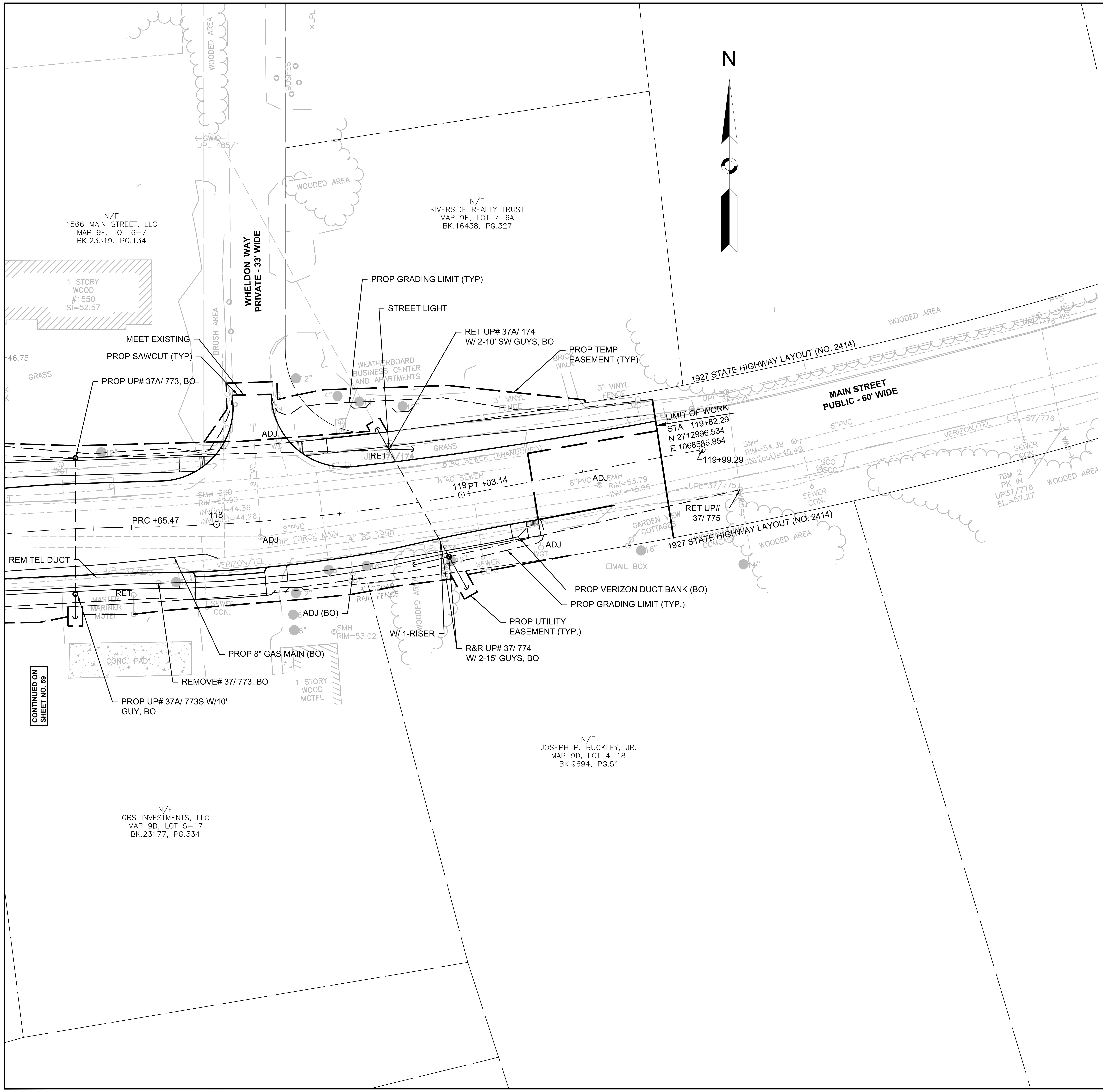
DRAINAGE STRUCTURE DATA

NO.	TYPE	STATION	RIM ELEV.	INVERT IN	INVERT OUT	REMARKS
54	CB	201+81 10.0' LT	48.40	-	45.90	DEEP SUMP CATCH BASIN
55	CBCI	201+78 10.4' RT	48.41	-	45.00	DEEP SUMP CATCH BASIN OFFSET COVER TO AVOID 12" RCP DRAIN
56	DMH	201+68 5.4' RT	48.63	(54) 45.75 (55) 44.85	44.75	-

CHATHAM
MAIN STREET (ROUTE 28) FROM
GEORGE RYDER ROAD TO BARN HILL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	60	109
	PROJECT FILE NO.	606596	

UTILITY PLANS



CONTINUED ON
SHEET NO. 59

0 20 50 100
SCALE: 1" = 20'

CHATHAM
MAIN STREET (ROUTE 28) FROM GEORGE RYDER ROAD TO BARN HILL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	61	109
PROJECT FILE NO.	606596		

LIGHTING PLANS

GENERAL NOTES:

1. ALL WORK SHALL CONFORM TO THE LATEST REVISIONS OF THE NATIONAL ELECTRICAL CODE, THE COMMONWEALTH OF MASSACHUSETTS HIGHWAY STANDARDS AND SPECIFICATIONS AND THE REQUIREMENTS OF THE TOWN OF CHATHAM.
2. ALL WORK SHALL BE COORDINATED WITH LOCAL PUBLIC UTILITIES. NO CONSTRUCTION SHALL COMMENCE UNTIL THE CONTRACTOR HAS NOTIFIED "DIG-SAFE" AND ALL UTILITIES HAVE BEEN PROPERLY IDENTIFIED. COORDINATE SERVICE LOCATIONS WITH EVERSOURCE.
3. LOCATION AND DEPTH OF EXISTING UTILITIES ARE APPROXIMATE AND HAVE BEEN PLOTTED FROM THE BEST AVAILABLE INFORMATION. CONTRACTOR SHALL CHECK AND VERIFY LOCATIONS OF ALL EXISTING UTILITIES. ANY DAMAGE TO THESE UTILITIES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
4. ALL LIGHTING CONDUITS TO BE 3" PVC SCH. 80 FOR ROADWAY CROSSINGS, EXCEPT OTHERWISE SHOWN, AND INSTALLED AT A DEPTH OF 30" BELOW GRADE FOR DIRECT BURIED INSTALLATIONS. INSTALL PULLING NYLON ROPE ON ALL SPARE CONDUITS FOR FUTURE USE. SERVICE CONDUIT FROM UTILITY TO LIGHTING CONTROL CABINET SHALL BE 3" RIGID STEEL.
5. PROVIDE ENOUGH SLACK (CABLE) AT ALL HANDHOLES AND PULLBOXES TO ALLOW FOR SPLICING AND REPAIRS TO BE MADE.
6. IDENTIFY AND TAG ALL CIRCUITS AT EACH HANDHOLE. PROVIDE NUMBERING TAGS ACCORDING TO CIRCUIT DESIGNATION AND AS SHOWN ON PLANS.
7. ALL WIRE SHALL BE TYPE 8 DIRECT BURIAL (INCLUDES POWER AND LIGHTING DISTRIBUTION SYSTEMS IN DUCT OR OTHER ELECTRICAL WIRE AND CABLE RACEWAYS) REFER TO LIGHTING PLANS AND DETAILS FOR WIRE GAGE SIZES.

☼	ROADWAY FIXTURE, TYPE IV (ROUNDABOUT)
✹	ROADWAY FIXTURE, TYPE III (ROAD)
■	HANDHOLE
⊠	CONTROL CABINET
▨	CONDUIT ROADWAY CROSSING

LIMIT OF PAVING
PI +41.60
303
PT +83.60
1970 TOWN LAYOUT
GEORGE RYDER ROAD PUBLIC - 40' WIDE
1970 TOWN LAYOUT
302
PC +74.90
2 REM
N
N/F NEW CREEK II LLC MAP 8E, LOT 52-27A BK.25979, PG.95
N/F DANIEL K. & SHARON F. MESERVEY MAP 8E, LOT 39-16 BK.10738, PG.86
HESS GAS STATION 1 STORY WOOD #1698
GAS PUMP OVERHANG
6' STOCKADE FENCE
P-1 4 | 25/6 | LP-1(L) LP-3(R) | 300+97
P-2 4 | 25/6 | LP-2(L) LP-4(R) | 300+56
P-3 4 | 25/6 | LP-1(L) LP-3(R) | 105+35
P-6 3 | 25/6 | LP-2(L) LP-4(R) | 105+78
P-7 3 | 25/6 | LP-1(L) LP-3(R) | 106+57
P-4 4 | 25/6 | LP-2(L) LP-4(R) | 104+21
P-5 4 | 25/6 | LP-1(L) LP-3(R) | 105+31
CONTINUED ON SHEET NO. 62
3"C, 4#4, 1#6GND
PT +79.57
301
GRASS
2"C, 4#10, 1#6GND TYPICAL FROM LIGHT TO HH
3"C, 4#4, 1#6GND
2@3"C SCHEDULE 80 PVC CONCRETE ENCASED (TYPICAL ALL RD CROSSINGS) 3"C, 4#4, 1#6GND 3"C SPARE
PC +32.57
REM
TBM 4 XCUT IN NUT HYDRANT EL.=42.91
EX. MASSDOT DRAINAGE EASEMENT PARCEL D-9
300+00
105
501
PRC +97.87
PRC +24.48
501+75.92 500+00
106
PCC +11.80
1927 STATE HIGHWAY LAYOUT (NO. 2414)
PROPOSED TEMPORARY EASEMENT (TYP)
1997 STATE HIGHWAY LAYOUT (NO. 2414)
LIMIT OF WORK STA 100+76.61 N 2713372.902 E 1066802.783
100+00
101
102
PI +70.37
103
PC +22.66
PCC +76.31
104
600+00
MAIN STREET PUBLIC - 60' WIDE
2@3"C SCHEDULE 80 PVC CONCRETE ENCASED (TYPICAL ALL RD CROSSINGS) 3"C, 8#4, 1#6GND 3"C SPARE
3"C, 8#4, 1#6GND (TYPICAL HH TO HH)
PROPOSED PERMANENT EASEMENT (TYP)
RET
RET
RET
1997 STATE HIGHWAY LAYOUT (NO. 2414)
WOODED AREA
CABLE BOX
DRAINAGE EASEMENT
DRAINAGE EASEMENT
UNDERGROUND COMCAST
MARKET PLACE 33' WIDE
N/F 341 NORFOLK STREET NOMINEE TRUST MAP 8E, LOT 1K-C73 CERT. No.161481
1 STORY WOOD #1715
N/F 33 CALLENDER STREET NOMINEE TRUST MAP 8E, LOT 1J-C72 CERT. No.161482
1 STORY WOOD #1705
PC +39.45
601
601+38.55
N/F 60 ALEXANDER STREET NOMINEE TRUST MAP 8D, LOT 53A-6A BK.21492, PG.69
N/F FM NOMINEE REALTY TRUST MAP 8D, LOT 48A-R42 BK.11513, PG.285
1 STORY BRICK #1671
GEORGE RYDER ROAD SOUTH PRIVATE - 33' WIDE
LIMIT OF WORK STA 601+38.55 N 2713080.360 E 1066929.985
HEDGE
0 20 50 100
SCALE: 1" = 20'
LIGHT POLE #
FIXTURE DISTRIBUTION
MTG HEIGHT/ARM LENGTH
STATION
P-1 4 | 25/6 | LP-1(L) LP-3(R) | 104+25
CKT # (L) LIGHT (R) RECEPTACLE
BLOCK KEY

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606596_UT(LIGHTING PLAN).DWG

CHATHAM
MAIN STREET (ROUTE 28) FROM GEORGE RYDER ROAD TO BARN HILL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	62	109
PROJECT FILE NO. 606596			

LIGHTING PLANS

606596_UT(LIGHTING PLAN).DWG Plotted on 30-Mar-2018 2:14 PM

N
N/F
THE SUMNER G. N. HARDING TRUST OF 1997
THE JEAN C. HARDING TRUST OF 1997
MAP 8E, LOT 53-27
BK.11030, PG.34
1 STORY WOOD #1652
N/F
THE SUMNER G.N. HARDING TRUST OF 1997
MAP 8E, LOT 1-H3
BK.11030, PG.33
N/F
THE SUMNER G. N. HARDING TRUST OF 1997
THE JEAN C. HARDING TRUST OF 1997
MAP 9E, LOT 1-11
BK.11030, PG.34
1 1/2 STORY WOOD #1620
N/F
TOWN OF CHATHAM
MAP 9E, LOT 2-10
BK.15361, PG.181
P-7 | 3 | 25/6 | LP-1(L) LP-3(R) | 106+57
P-8 | 3 | 25/6 | LP-2(L) LP-4(R) | 107+37
P-9 | 3 | 25/6 | LP-1(L) LP-3(R) | 108+29
P-10 | 3 | 25/6 | LP-2(L) LP-4(R) | 109+27
P-11 | 3 | 25/6 | LP-5(L) LP-7(R) | 110+23
P-12 | 3 | 25/6 | LP-6(L) LP-8(R) | 111+19
P-13 | 3 | 25/6 | LP-5(L) LP-7(R) | 112+08
PROPOSED TEMPORARY EASEMENT (TYP)
UNDERGROUND COMCAST
2@3"C SCHEDULE 80 PVC
3"C, 8/4, 1#6GND
3"C, 2/10, 1#10GND (PHOTOCELL)
FROM HH TO HH
106
PCC +11.80
107
108
WOODED AREA
GRASS
BRUSH AREA
1927 STATE HIGHWAY LAYOUT (NO. 2414)
2"C, 4#10, 1#6GND
TYPICAL FROM LIGHT TO HH
3"C, 8#4, 1#6GND
TYP FROM HH TO HH
PT +44.03
109
110
111
112
PHOTOCELL MOUNTED ON LIGHT POLE P-11
3"C, 8#4, 1#6GND
TYP FROM HH TO HH
MAIN STREET
PUBLIC - 60' WIDE
EXISTING UTILITY POLE RET 37/766
UPL 37/765A
UPL 37/765W
UPL 37/766
UPL 37/768
UPL 236/1
EHH
MHT
3@3"C SCHEDULE 80 PVC
CONCRETE ENCASED
(TYPICAL ALL RD CROSSINGS)
3"C, 16#4, 1#6GND
3"C SPARE
3"C, 2#10, 1#10GND (PHOTOCELL)
1927 STATE HIGHWAY LAYOUT (NO. 2414)
4' CHAIN LINK FENCE
3' CEDAR RAIL FENCE
PROPOSED LIGHTING CONTROL CABINET
ELECTRIC SERVICE CONNECTION
W/ EVERSOURCE APPROVED HANDHOLE
(POLYMER CONCRETE) FURNISHED AND INSTALLED
W/ 2@3" RGS SWEEPS AND RISERS FROM
EVERSOURCE HANDHOLE UP TO SERVICE POLE".
CONTINUED ON SHEET NO. 61
CONTINUED ON SHEET NO. 63
N/F
FM NOMINEE REALTY TRUST
MAP 8D, LOT 48-R42B
BK.11513, PG.285
1960 TOWN LAYOUT
SEAQUANSET ROAD
PUBLIC - 35' WIDE
1960 TOWN LAYOUT
VACANT BUSINESS 1 STORY WOOD #1629
N/F
LOWER CAPE VENTURES, LLC
MAP 8D, LOT 1-8
BK.19749, PG.3
N/F
BOTSOLIS FAMILY REALTY TRUST
MAP 9D, LOT 45-14B
BK.22936, PG.8
OLLIE'S RESTAURANT 2 STORY WOOD #1603
N/F
BARN HILL PROPERTIES, INC
MAP 9D, LOT 44-12A
BK.20908, PG.180
N/F
SEAQUANSET REALTY TRUST
MAP 8D, LOT 51-R45
BK.12199, PG.73
VACANT BUSINESS 1 STORY WOOD #16
☼ ROADWAY FIXTURE, TYPE IV (ROUNDABOUT)
✸ ROADWAY FIXTURE, TYPE III (ROAD)
■ HANDHOLE
☒ CONTROL CABINET
▨ CONDUIT ROADWAY CROSSING
0
20
50
100
SCALE: 1" = 20'

CHATHAM
MAIN STREET (ROUTE 28) FROM GEORGE RYDER ROAD TO BARN HILL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	63	109
PROJECT FILE NO.	606596		

LIGHTING PLANS

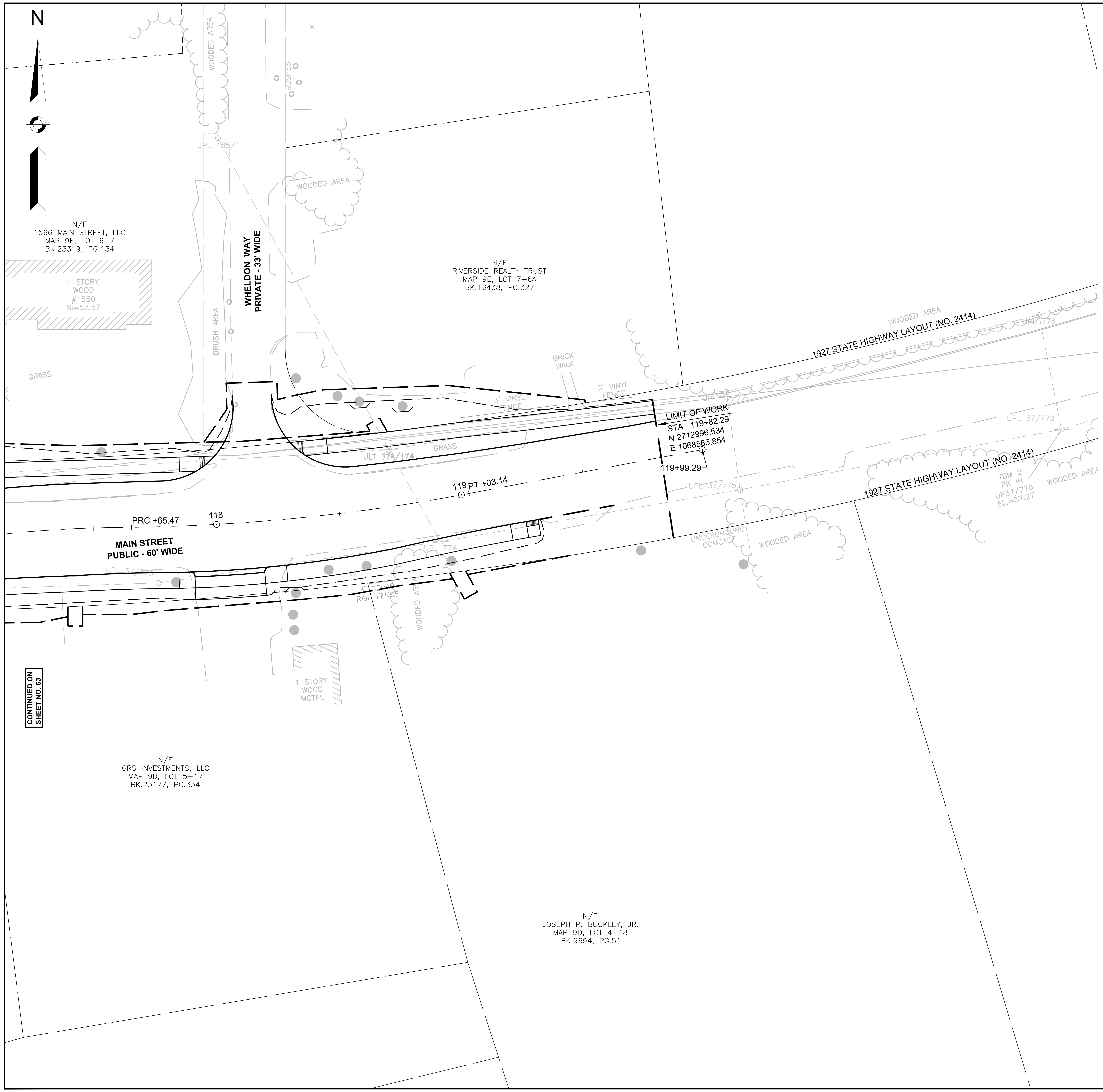
N
N/F TOWN OF CHATHAM MAP 9E, LOT 2-10 BK.15361, PG.181
N/F TOWN OF CHATHAM MAP 9E, LOT 3-9 BK.18912, PG.179
N/F TOWN OF CHATHAM MAP 9E, LOT 3B-9B BK.18912, PG.179
25' WIDE DRAINAGE EASEMENT
N/F CAPE COD COMMERCIAL HOOK FISHERMAN'S ASSOCIATION, INC. MAP 9E, LOT 5-8 BK.24712, PG.341
2 STORY WOOD #1566
PORCH
RIGHT OF WAY
15' WIDE UTILITY EASEMENT
N/F 1566 MAIN STREET, LLC MAP 9E, LOT 6-7 BK.23319, PG.134
1 STORY WOOD #1550 SI=52.57
BRUSH AREA
WHELDON WAY PRIVATE - 33' WIDE
GRASS
BRICK WALK
P-13 | 3 | 25/6 | LP-5(L) LP-7(R) | 112+08
P-14 | 3 | 25/6 | LP-6(L) LP-8(R) | 112+97
P-15 | 3 | 25/6 | LP-5(L) LP-7(R) | 113+88
P-16 | 4 | 25/6 | LP-6(L) LP-8(R) | 114+81
P-17 | 4 | 25/6 | LP-5(L) LP-7(R) | 115+26
P-18 | 4 | 25/6 | LP-6(L) LP-8(R) | 116+10
P-19 | 4 | 25/6 | LP-5(L) LP-7(R) | 115+96
P-20 | 4 | 25/6 | LP-6(L) LP-8(R) | 200+94
P-21 | 4 | 25/6 | LP-5(L) LP-7(R) | 200+39
PROPOSED TEMPORARY EASEMENT (TYP)
PROPOSED PERMANENT EASEMENT (TYP)
WOODED AREA
CEDAR RAIL FENCE
TBM 3 CONC. BND W/DH=50.00
EMTR BOX
1927 STATE HIGHWAY LAYOUT (NO. 2414)
REM
3"C, 8#4, 1#6GND TYPICAL FROM HH TO HH
112
113
114
PI +98.78
PI +14.94
PC +51.32
MAIN STREET PUBLIC - 60' WIDE
3"C, 4#4, 1#6GND
400+00
401+75.92
PRC +38.51
200+00
401
2"C, 4#10, 1#6GND TYPICAL FROM LIGHT TO HH
PC +74.05
117
PRC +65.47
118
116
PT +89.54
UPL 37/771
2@3"C SCHEDULE 80 PVC CONCRETE ENCASED (TYPICAL ALL RD CROSSINGS) 3"C, 8#4, 1#6GND 3"C SPARE
6' STOCKADE FENCE
OLLIE'S RESTAURANT 2 STORY WOOD #1603
LARRY'S PX RESTAURANT 1 STORY WOOD #1579-1595
3"C, 4#4, 1#6GND
DUNKIN DONUTS 2 STORY WOOD #595
1 STORY WOOD MOTEL
CONTINUED ON SHEET NO. 62
CONTINUED ON SHEET NO. 64
N/F BARN HILL PROPERTIES, INC MAP 9D, LOT 44-12A BK.20908, PG.180
N/F BARN HILL PROPERTIES, INC MAP 9D, LOT 43-12 BK.21678, PG.163
N/F GRS INVESTMENTS, LLC MAP 9D, LOT 5-17 BK.23177, PG.334
N/F GRS INVESTMENTS, LLC MAP 9D, LOT 6-16 BK.23177, PG.334
201
202
1958 TOWN LAYOUT
BARN HILL ROAD PUBLIC - 40' WIDE
3' CEDAR RAIL FENCE
UPL
3' STOCKADE FENCE
6' STOCKADE FENCE
LIMIT OF WORK STA 202+43.67 N 2712719.044 E 1068235.010
202+19.73
ROADWAY FIXTURE, TYPE IV (ROUNDABOUT)
ROADWAY FIXTURE, TYPE III (ROAD)
HANDHOLE
CONTROL CABINET
CONDUIT ROADWAY CROSSING
0 20 50 100
SCALE: 1" = 20'

606596_UT(LIGHTING PLAN).DWG Plotted on 30-Mar-2018 2:14 PM

CHATHAM
MAIN STREET (ROUTE 28) FROM GEORGE RYDER ROAD TO BARN HILL ROAD

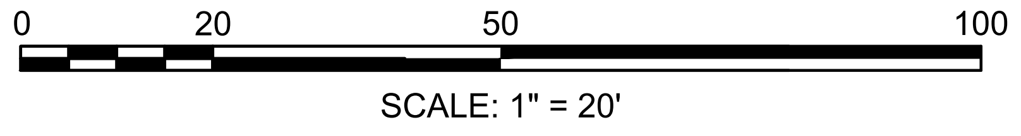
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	64	109
PROJECT FILE NO.	606596		

LIGHTING PLANS



CONTINUED ON SHEET NO. 63

☼	ROADWAY FIXTURE, TYPE IV (ROUNDABOUT)
✹	ROADWAY FIXTURE, TYPE III (ROAD)
■	HANDHOLE
⊠	CONTROL CABINET
▨	CONDUIT ROADWAY CROSSING



SCALE: 1" = 20'

CHATHAM
MAIN STREET (ROUTE 28) FROM
GEORGE RYDER ROAD TO BARN HILL ROAD

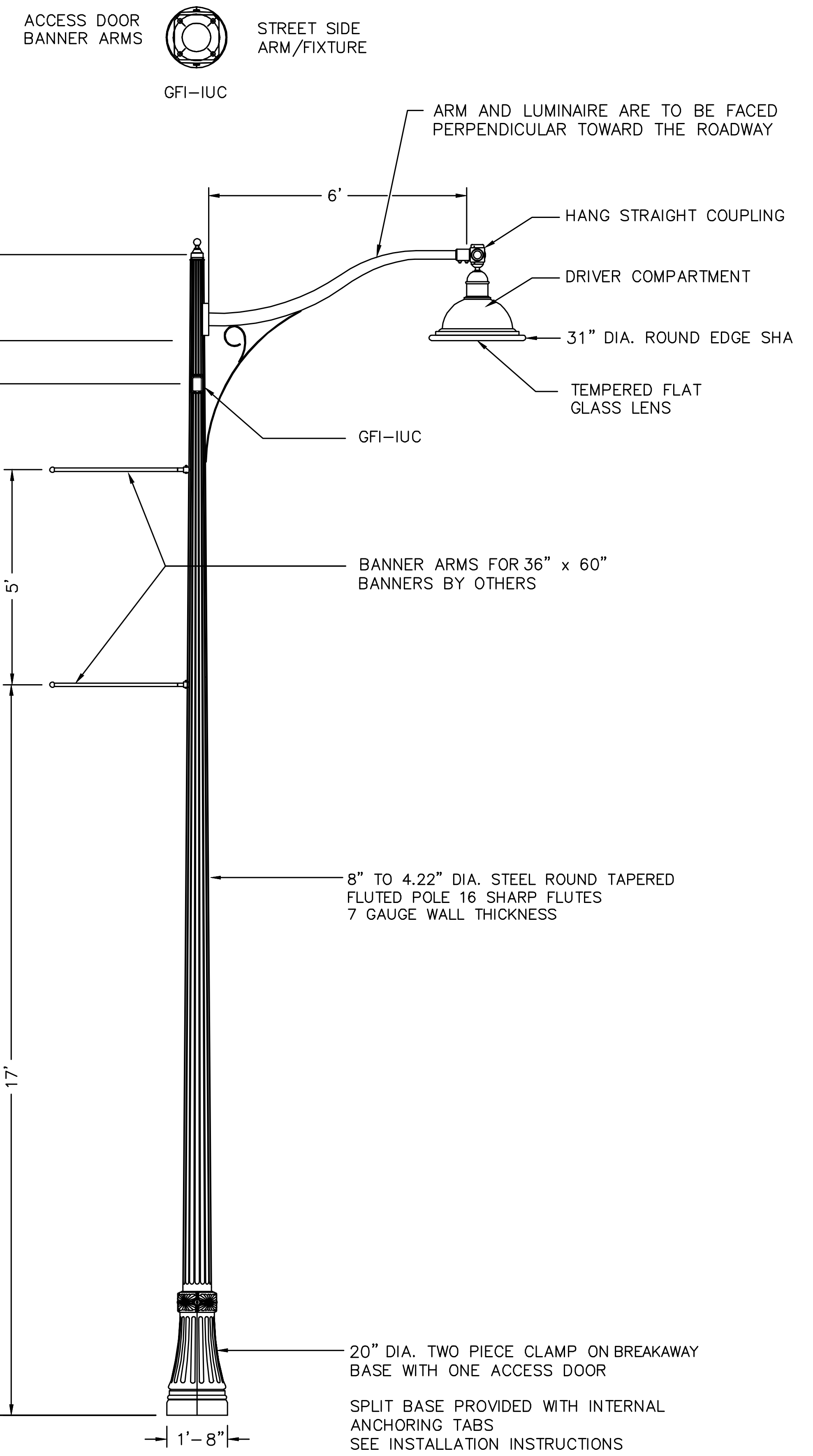
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	65	109
PROJECT FILE NO. 606596			

LIGHTING DETAILS

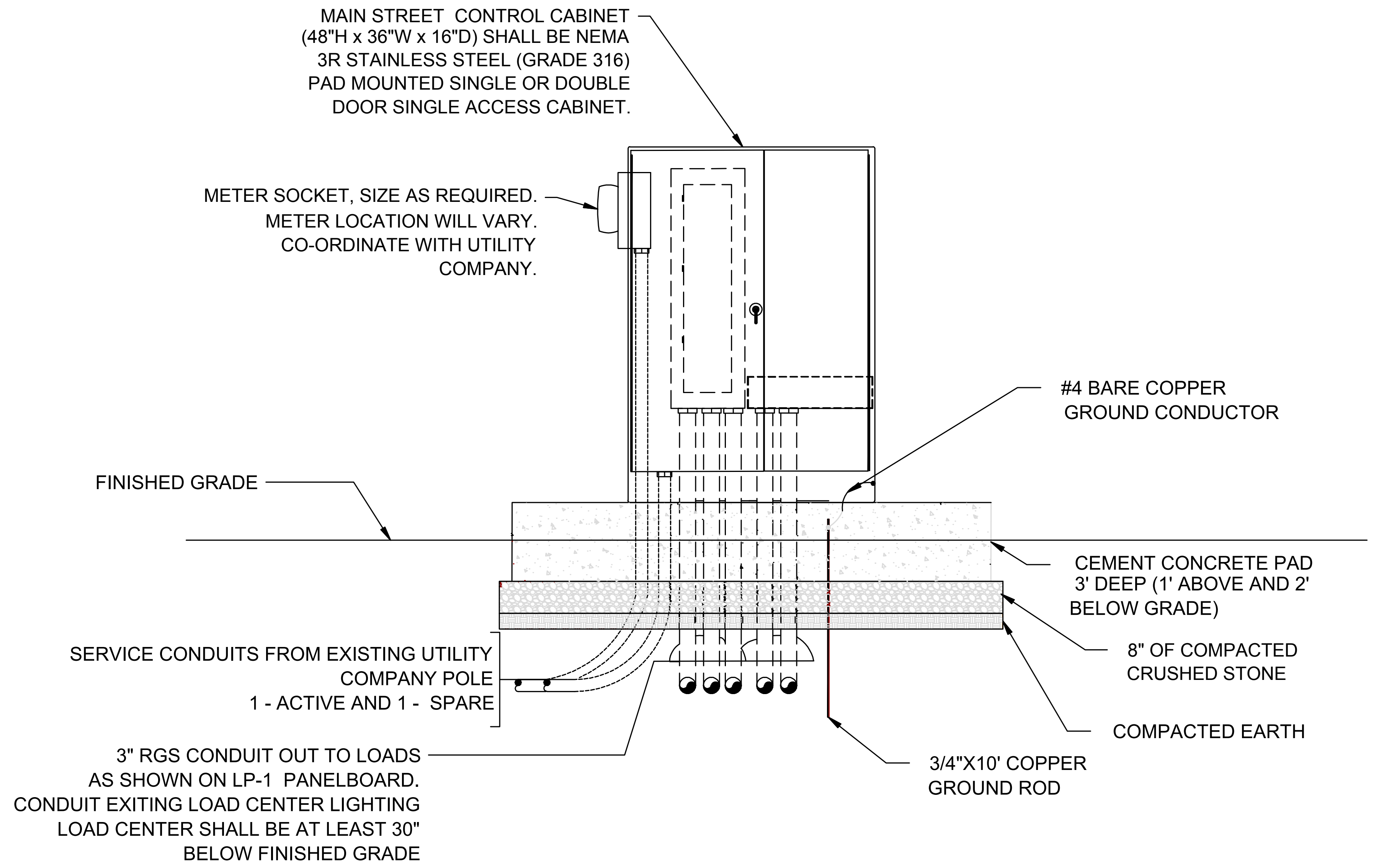
606596_UT(LIGHTING DETAILS).DWG Plotted on 4-Apr-2018 9:46 AM

LIGHTING PNLBD `LP-1' SCHEDULE - CHATHAM - ROUTE 28

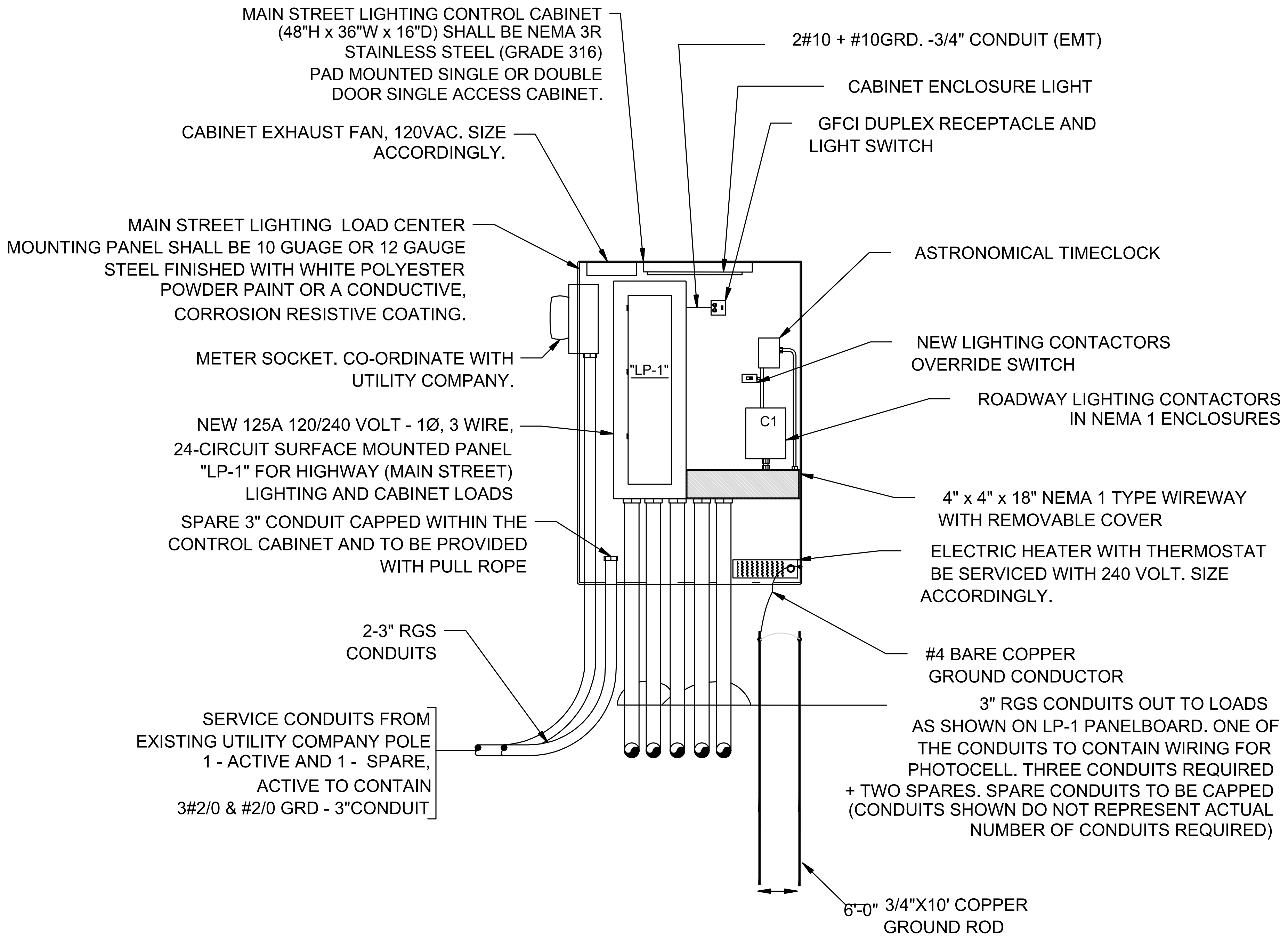
	CIRCUIT BREAKER					WIRE SIZE								
CIRCUIT NUMBER	FRAME SIZE AMPS	TRIP SETTING	I C AMPS	POLES	VOLTAGE	NO.	WIRE SIZE	NO.	GROUND WIRE	NAME PLATE INSCRIPTION	CONN. LOAD KW			REMARKS
											A	B		
1	100	20	10KAIC	2	240	2	4	1	6	LIGHTING				
2	100	20	10KAIC	2	240	2	4	1	6	LIGHTING				
3	100	20	10KAIC	1	120	2	4	1	6	POLE RECEPTACLE				
4	100	20	10KAIC	1	120	2	4	1	6	POLE RECEPTACLE				
5	100	20	10KAIC	2	240	2	4	1	6	LIGHTING				
6	100	20	10KAIC	2	240	2	4	1	6	LIGHTING				
7	100	20	10KAIC	1	120	2	4	1	6	POLE RECEPTACLE				
8	100	20	10KAIC	1	120	2	4	1	6	POLE RECEPTACLE				
9	100	20	10KAIC	1	120	2	12	1	12	CABINET RECEPTACLE AND LIGHT				
10	100	15	10KAIC	1	120	2	10	1	12	CABINET EXH FAN				
11	100	20	10KAIC	1	120	2	10	1	12	CONTACTOR				
11	100	20	10KAIC	1	120	2	10	1	12	ASTRONOMICAL TIME CLOCK				
11	100	20	10KAIC	1	120	2	10	1	12	PHOTOCELL				
13	100	15	10KAIC	2	240	2	10	1	12	CABINET HEATER				
14	100	20	10KAIC	1	120					SPARE (14-18)				
15														
18														


ACCESS DOOR
BANNER ARMS
STREET SIDE
ARM/FIXTURE
GFI–IUC
ARM AND LUMINAIRE ARE TO BE FACED PERPENDICULAR TOWARD THE ROADWAY
6'
HANG STRAIGHT COUPLING
DRIVER COMPARTMENT
31" DIA. ROUND EDGE SHA
TEMPERED FLAT GLASS LENS
GFI–IUC
BANNER ARMS FOR 36" x 60" BANNERS BY OTHERS
5'
27'
25'
24'
17'
8" TO 4.22" DIA. STEEL ROUND TAPERED FLUTED POLE 16 SHARP FLUTES 7 GAUGE WALL THICKNESS
20" DIA. TWO PIECE CLAMP ON BREAKAWAY BASE WITH ONE ACCESS DOOR
SPLIT BASE PROVIDED WITH INTERNAL ANCHORING TABS SEE INSTALLATION INSTRUCTIONS
1'–8"

LIGHTING FIXTURE TYPE 'A' AND 'A1'
N.T.S.


MAIN STREET CONTROL CABINET (48"H x 36"W x 16"D) SHALL BE NEMA 3R STAINLESS STEEL (GRADE 316) PAD MOUNTED SINGLE OR DOUBLE DOOR SINGLE ACCESS CABINET.
METER SOCKET, SIZE AS REQUIRED. METER LOCATION WILL VARY. CO-ORDINATE WITH UTILITY COMPANY.
#4 BARE COPPER GROUND CONDUCTOR
FINISHED GRADE
CEMENT CONCRETE PAD 3' DEEP (1' ABOVE AND 2' BELOW GRADE)
8" OF COMPACTED CRUSHED STONE
SERVICE CONDUITS FROM EXISTING UTILITY COMPANY POLE 1 - ACTIVE AND 1 - SPARE
COMPACTED EARTH
3" RGS CONDUIT OUT TO LOADS AS SHOWN ON LP-1 PANELBOARD. CONDUIT EXITING LOAD CENTER LIGHTING LOAD CENTER SHALL BE AT LEAST 30" BELOW FINISHED GRADE
3/4"X10' COPPER GROUND ROD

MAIN STREET LIGHTING LOAD CENTER
N.T.S.


MAIN STREET LIGHTING CONTROL CABINET (48"H x 36"W x 16"D) SHALL BE NEMA 3R STAINLESS STEEL (GRADE 316) PAD MOUNTED SINGLE OR DOUBLE DOOR SINGLE ACCESS CABINET.
2#10 + #10GRD. -3/4" CONDUIT (EMT)
CABINET ENCLOSURE LIGHT
GFCI DUPLEX RECEPTACLE AND LIGHT SWITCH
CABINET EXHAUST FAN, 120VAC. SIZE ACCORDINGLY.
MAIN STREET LIGHTING LOAD CENTER MOUNTING PANEL SHALL BE 10 GUAGE OR 12 GAUGE STEEL FINISHED WITH WHITE POLYESTER POWDER PAINT OR A CONDUCTIVE, CORROSION RESISTIVE COATING.
ASTRONOMICAL TIMECLOCK
METER SOCKET. CO-ORDINATE WITH UTILITY COMPANY.
"LP-1"
NEW LIGHTING CONTACTORS OVERRIDE SWITCH
ROADWAY LIGHTING CONTACTORS IN NEMA 1 ENCLOSURES
C1
NEW 125A 120/240 VOLT - 1Ø, 3 WIRE, 24-CIRCUIT SURFACE MOUNTED PANEL "LP-1" FOR HIGHWAY (MAIN STREET) LIGHTING AND CABINET LOADS
4" x 4" x 18" NEMA 1 TYPE WIREWAY WITH REMOVABLE COVER
SPARE 3" CONDUIT CAPPED WITHIN THE CONTROL CABINET AND TO BE PROVIDED WITH PULL ROPE
ELECTRIC HEATER WITH THERMOSTAT BE SERVICED WITH 240 VOLT. SIZE ACCORDINGLY.
2-3" RGS CONDUITS
#4 BARE COPPER GROUND CONDUCTOR
SERVICE CONDUITS FROM EXISTING UTILITY COMPANY POLE 1 - ACTIVE AND 1 - SPARE, ACTIVE TO CONTAIN 3#2/0 & #2/0 GRD - 3"CONDUIT
3" RGS CONDUITS OUT TO LOADS AS SHOWN ON LP-1 PANELBOARD. ONE OF THE CONDUITS TO CONTAIN WIRING FOR PHOTOCELL. THREE CONDUITS REQUIRED + TWO SPARES. SPARE CONDUITS TO BE CAPPED (CONDUITS SHOWN DO NOT REPRESENT ACTUAL NUMBER OF CONDUITS REQUIRED)
6'-0"
3/4"X10' COPPER GROUND ROD

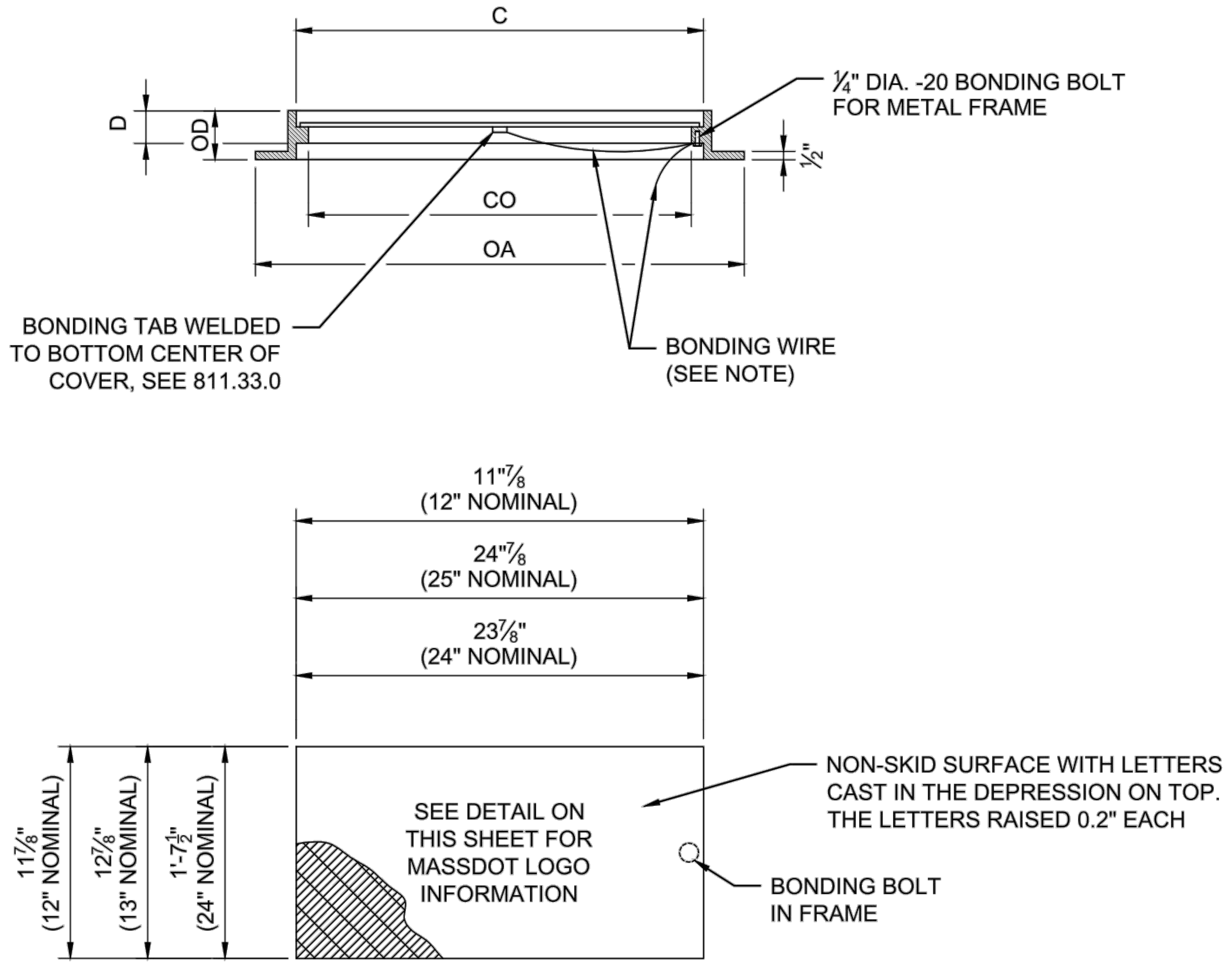
MAIN STREET LIGHTING LOAD CENTER COMPONENT LAYOUT
N.T.S.

CHATHAM
MAIN STREET (ROUTE 28) FROM
GEORGE RYDER ROAD TO BARN HILL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	66	109
PROJECT FILE NO.	606596		

LIGHTING DETAILS

606596_UT(LIGHTING DETAILS).DWG   Plotted on 30-Mar-2018 2:14 PM

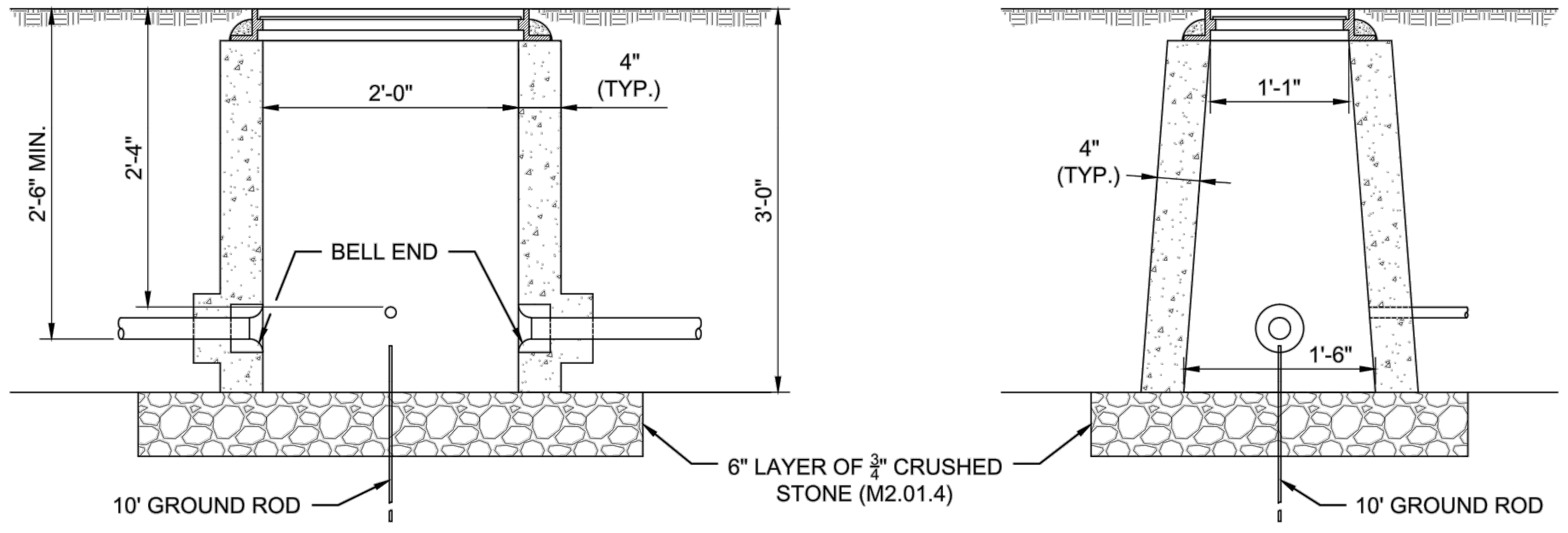

C
D
OD
¼" DIA. -20 BONDING BOLT FOR METAL FRAME
½"
CO
OA
BONDING TAB WELDED TO BOTTOM CENTER OF COVER, SEE 811.33.0
BONDING WIRE (SEE NOTE)
11"⅞ (12" NOMINAL)
24"⅞ (25" NOMINAL)
23⅞" (24" NOMINAL)
11⅞" (12" NOMINAL)
12⅞" (13" NOMINAL)
1'-7½" (24" NOMINAL)
SEE DETAIL ON THIS SHEET FOR MASSDOT LOGO INFORMATION
NON-SKID SURFACE WITH LETTERS CAST IN THE DEPRESSION ON TOP. THE LETTERS RAISED 0.2" EACH
BONDING BOLT IN FRAME

ELECTRIC HANDHOLE FRAME AND COVER DETAIL

N.T.S.

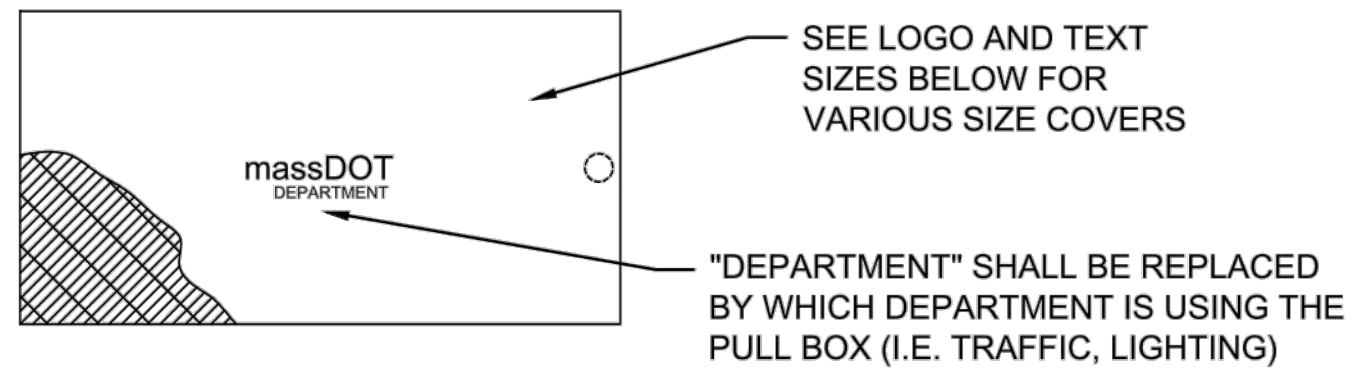
SIZE OF COVER	COVER DEPTH	OVERALL DEPTH	CLEAR OPENING	OVERALL	APPROX. WEIGHT
C	D	OD	CO	OA	W
12" x 12"	1"	3½"	10½" x 10½"	17¼" x 17¼"	82 LB.
13" x 25"	1½"	3"	12" x 24"	20" x 29¾"	120 LB.
24" x 24"	1"	3"	22" x 22"	28½" x 28½"	190 LB.

NOTE:
ATTACH 3 FEET OF NO. 8 BONDING WIRE FROM COVER TAB TO BONDING BOLT ON FRAME. ATTACH SUFFICIENT LENGTH OF NO. 8 BONDING WIRE FROM BONDING BOLT ON FRAME TO THE BONDING WIRE ROUTED THROUGH THE PULL BOX.



SECTIONS THROUGH ELECTRIC HANDHOLE (SD2-022)

N.T.S.

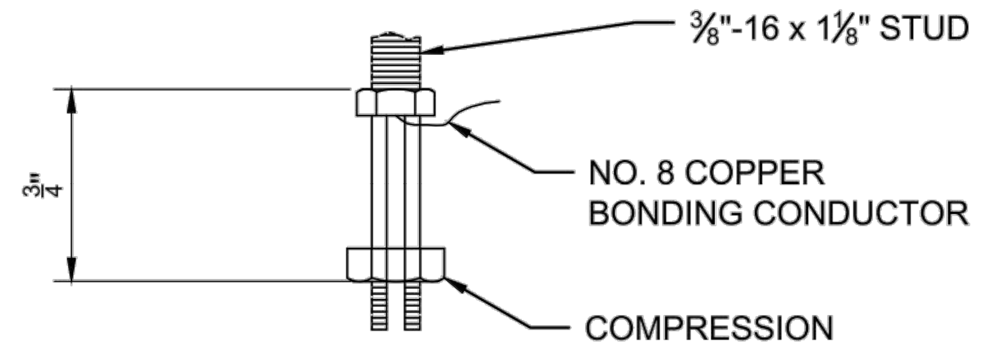

massDOT
DEPARTMENT
SEE LOGO AND TEXT SIZES BELOW FOR VARIOUS SIZE COVERS
"DEPARTMENT" SHALL BE REPLACED BY WHICH DEPARTMENT IS USING THE PULL BOX (I.E. TRAFFIC, LIGHTING)

MASSDOT LOGO FOR ELECTRIC HANDHOLE

N.T.S.

NOTE:
1. LOGO AND TEXT SHALL BE CENTERED WITHIN THE COVER.
2. LOGO AND TEXT SHALL BE RAISED 0.2 INCHES FROM THE COVER SURFACE.
3. LOGO AND TEXT SHALL BE ITALICIZED AND SHALL UTILIZE THE "ERAS DEMI" STYLE FONT.

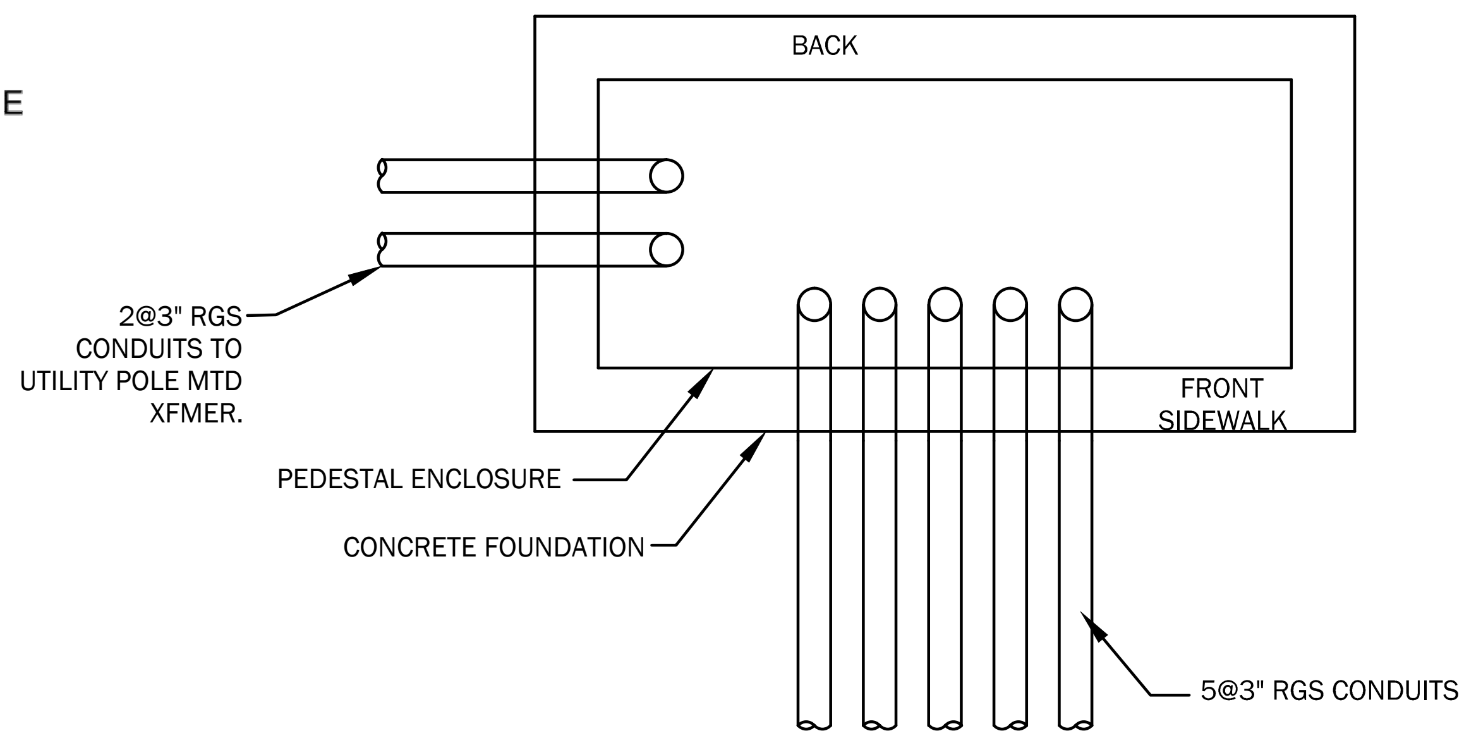
SIZE OF COVER	MASSDOT LOGO	DEPARTMENT TEXT SIZE
12" x 12"	9" WIDE x 1.3" HIGH	TRAFFIC: 3" WIDE x 0.5" HIGH LIGHTING: 3.5" WIDE x 0.5" HIGH
12" x 8"	6" WIDE x 0.85" HIGH	TRAFFIC: 2" WIDE x 0.35" HIGH LIGHTING: 2.25" WIDE x 0.35" HIGH
13" x 24"	13.25" WIDE x 2" HIGH	TRAFFIC: 3" WIDE x 0.5" HIGH LIGHTING: 3.5" WIDE x 0.5" HIGH
CIRCULAR (24", 26" OR 27.5" DIAMETER)	13.25" WIDE x 2" HIGH	TRAFFIC: 3" WIDE x 0.5" HIGH LIGHTING: 3.5" WIDE x 0.5" HIGH



BONDING LUG

N.T.S.

NOTES:
1. BONDING POST CONNECTOR SHALL BE LONG STUD TYPE WHICH WILL ACCOMMODATE A DOUBLE CONDUCTOR INSTALLATION.
2. ATTACH 3 FOOT LENGTH OF NO.8 COPPER BONDING CONDUCTOR FROM BONDING POST CONNECTOR INSTALLED ON COVER TO BONDING POST CONNECTOR INSTALLED ON FRAME.
3. ATTACH FREE END OF BONDING CONDUCTOR ROUTED THROUGH CONDUIT SYSTEM TO BONDING POST CONNECTOR INSTALLED ON THE FRAME.
4. LUG SHALL BE EITHER COPPER OR BRASS.



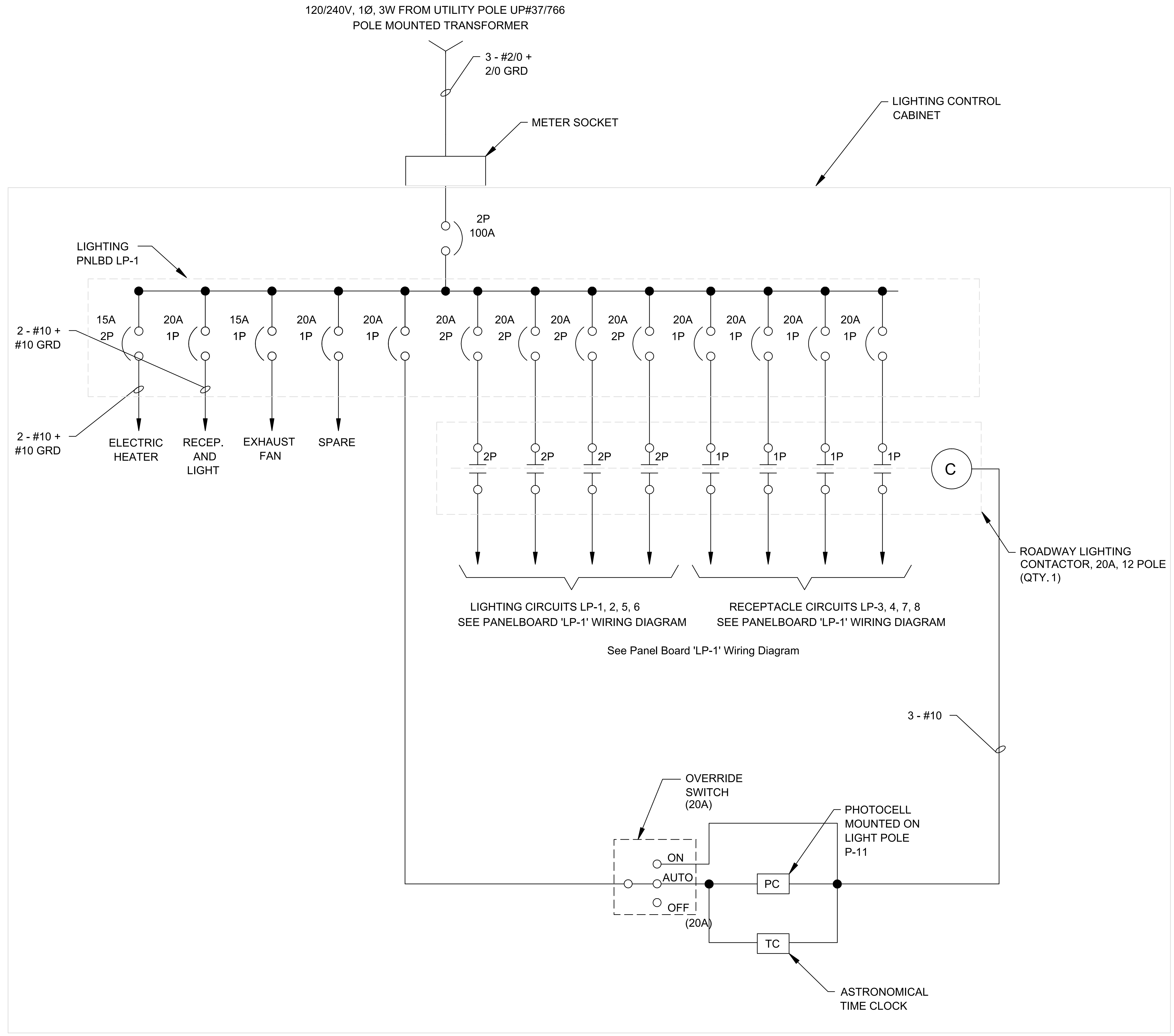
SERVICE PEDESTAL CONDUIT DETAIL

NOT TO SCALE

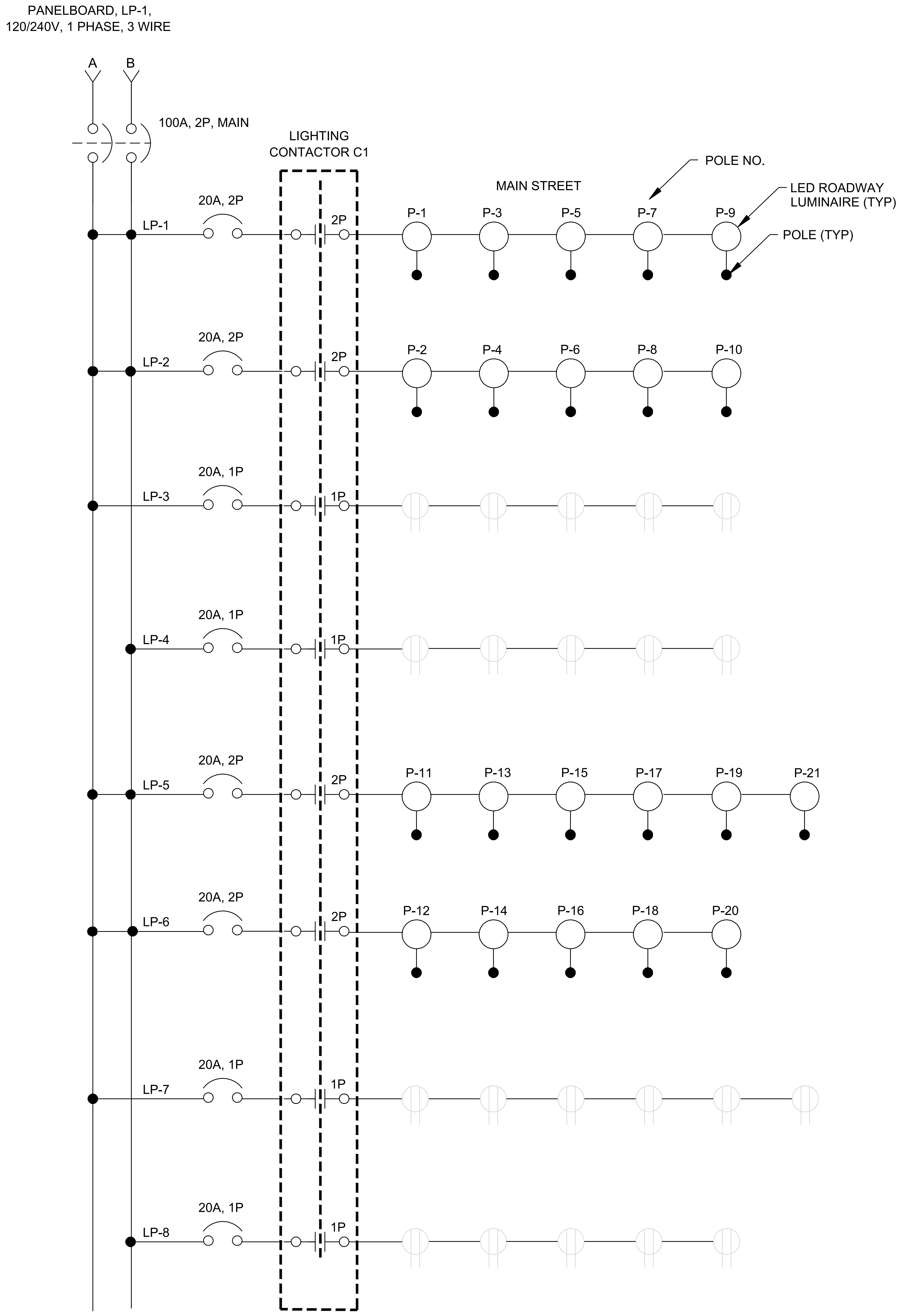
CHATHAM
MAIN STREET (ROUTE 28) FROM
GEORGE RYDER ROAD TO BARN HILL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	67	109
PROJECT FILE NO.	606596		

LIGHTING DETAILS



SINGLE LINE DIAGRAM
LIGHTING LOAD CENTER

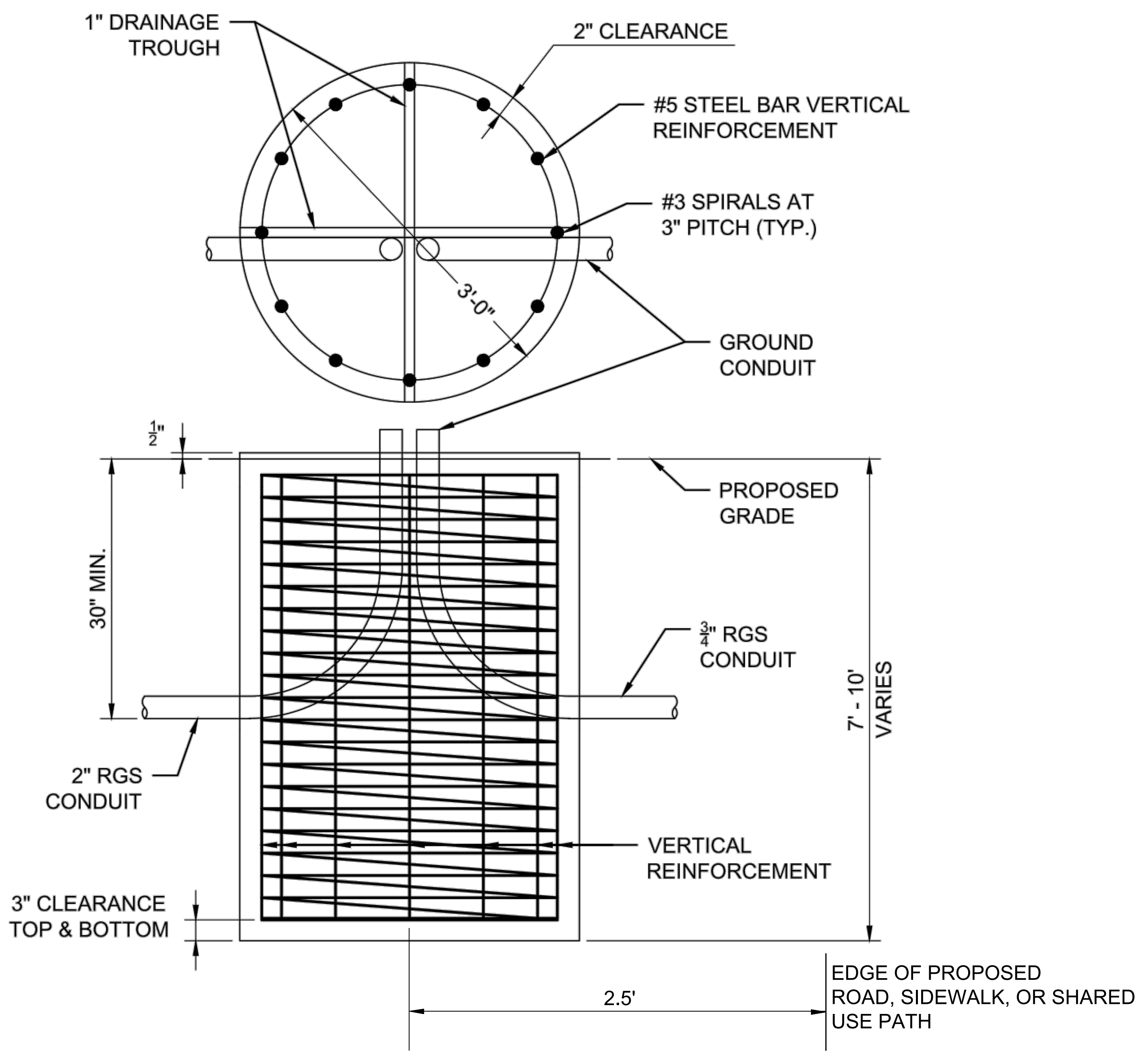


PANELBOARD 'LP-1' WIRING DIAGRAM

CHATHAM
MAIN STREET (ROUTE 28) FROM GEORGE RYDER ROAD TO BARN HILL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	68	109
PROJECT FILE NO.	606596		

LIGHTING DETAILS

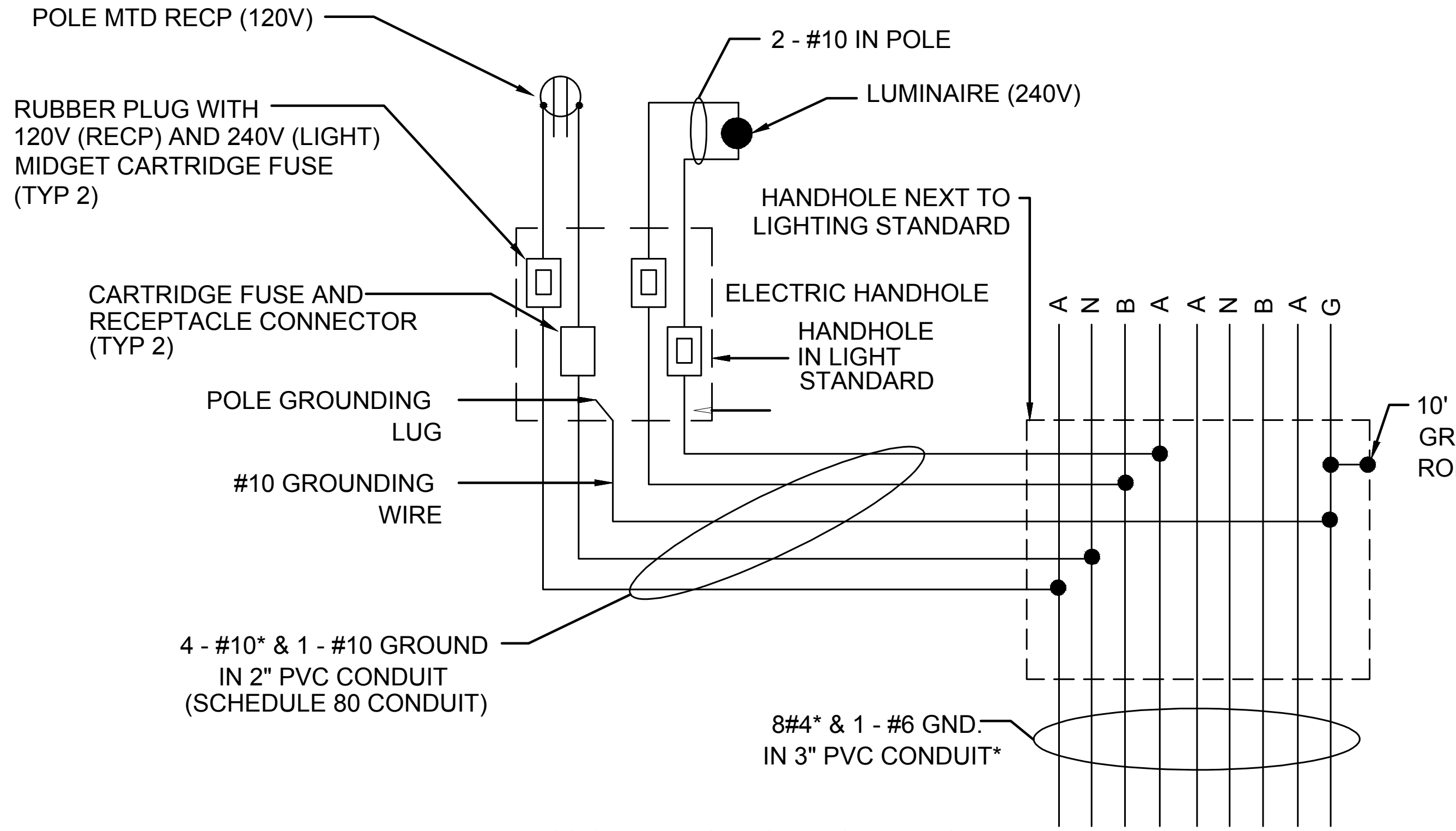


FOUNDATION DESIGN CHART			
MOUNTING HEIGHT	DIAMETER	DEPTH	VERTICAL REINFORCEMENT
30' - 40'	3'-0"	7'-0"	8-#5
50' - 100'	3'-0"	10'-0"	12-#5

NOTES:

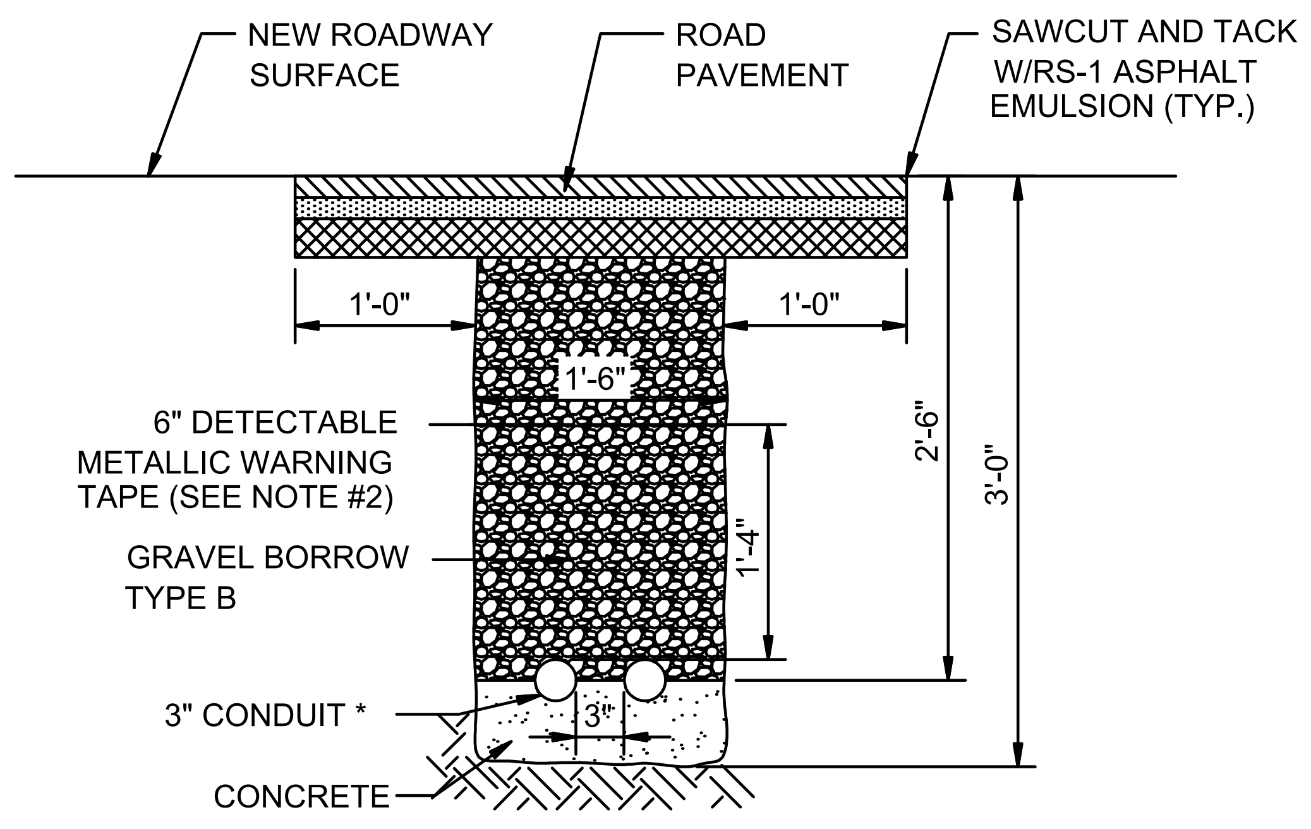
CEMENT CONCRETE FOR FOUNDATIONS TO BE 4000 PSI 1.5" 565 LB CEMENT CONCRETE. THE ACTUAL DEPTH OF FOUNDATION FOR MOUNTING HEIGHT BETWEEN 25'-40' WILL BE THE 7'-0" DIMENSION ABOVE PLUS THE ½" REVEAL AND THE ACTUAL DEPTH OF FOUNDATION FOR MOUNTING HEIGHT BETWEEN 50'-100' WILL BE THE 10'-0" DIMENSION ABOVE PLUS THE ½" REVEAL. THE ANCHOR BOLTS SHALL BE SUPPLIED BY THE LIGHT STANDARD MANUFACTURER. THE MANUFACTURER SHALL ALSO SUPPLY A TEMPLATE FOR SETTING THE BOLTS AND SHALL INDICATE THE NECESSARY PROJECTION.

LIGHT STANDARD FOUNDATION
N.T.S.


POLE MTD RECP (120V)
RUBBER PLUG WITH 120V (RECP) AND 240V (LIGHT) MIDGET CARTRIDGE FUSE (TYP 2)
CARTRIDGE FUSE AND RECEPTACLE CONNECTOR (TYP 2)
POLE GROUNDING LUG
#10 GROUNDING WIRE
4 - #10* & 1 - #10 GROUND IN 2" PVC CONDUIT (SCHEDULE 80 CONDUIT)
2 - #10 IN POLE
LUMINAIRE (240V)
HANDHOLE NEXT TO LIGHTING STANDARD
ELECTRIC HANDHOLE
HANDHOLE IN LIGHT STANDARD
A N B A A N B A G
10' GROUND ROD
8#4* & 1 - #6 GND. IN 3" PVC CONDUIT*

* = UNLESS OTHERWISE NOTED ON PLANS

WIRING DIAGRAM FOR SINGLE ARM HIGHWAY LUMINAIRE
N.T.S.

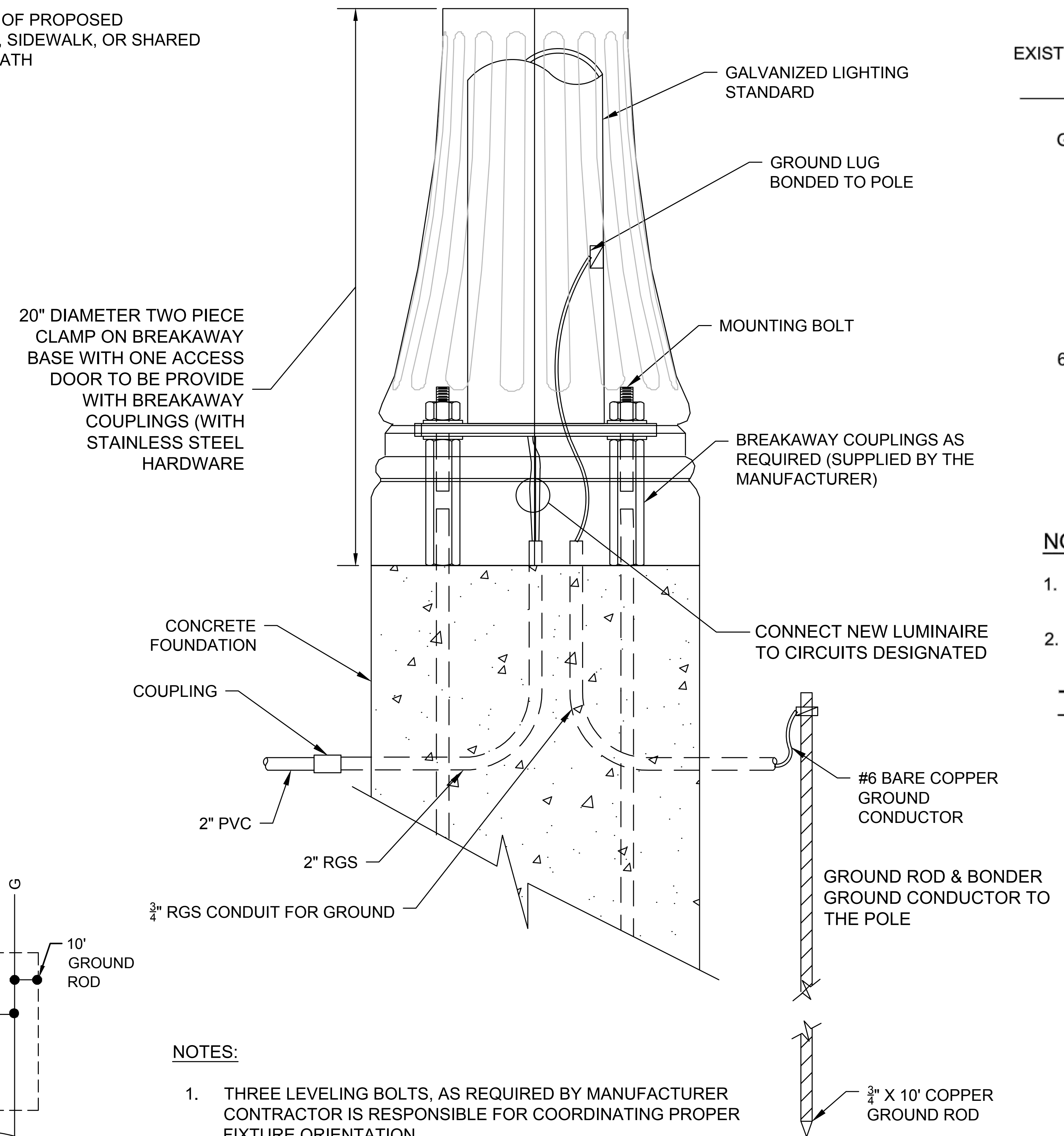


* = UNLESS OTHERWISE NOTED ON PLANS

NOTES:

1. SCHEDULE 80 ELECTRICAL CONDUIT TYPE NM-PLASTIC (UL) WITH PULL ROPE.
2. WARNING TAPE SHALL BE PER CURRENT APWA STANDARDS.

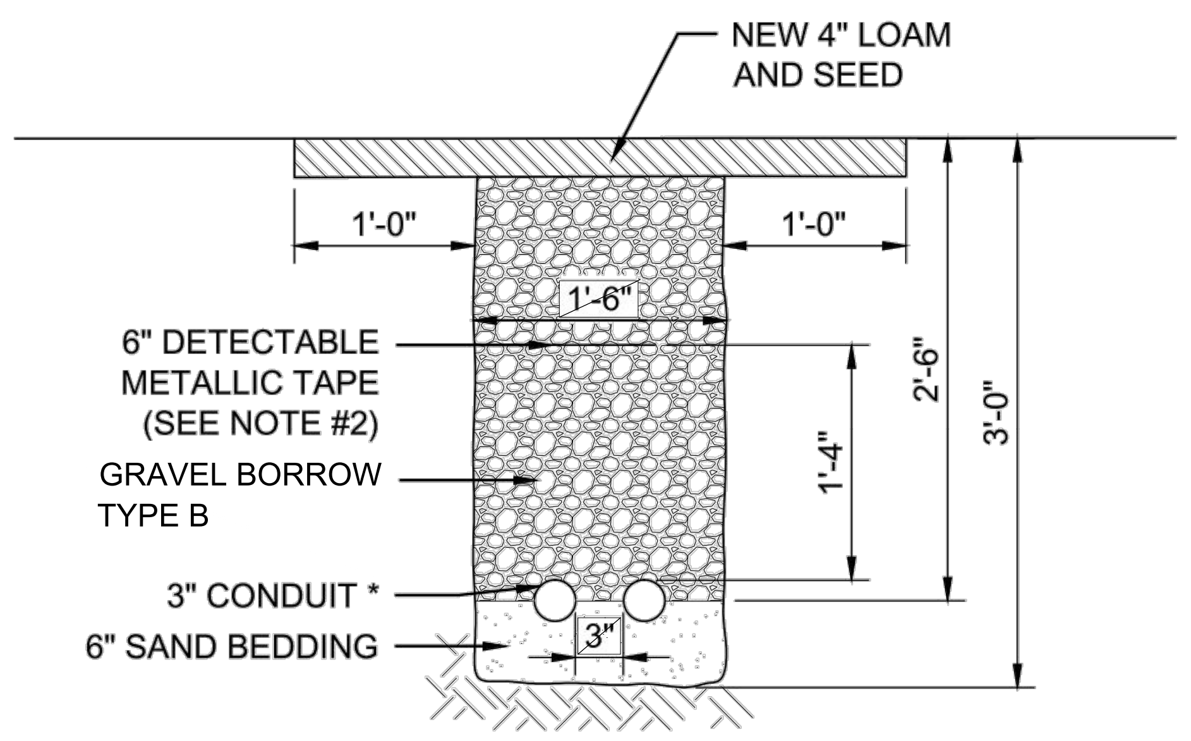
TRENCH DETAIL (ASPHALT) - SUP & SIDEWALK
N.T.S.


GALVANIZED LIGHTING STANDARD
GROUND LUG BONDED TO POLE
MOUNTING BOLT
20" DIAMETER TWO PIECE CLAMP ON BREAKAWAY BASE WITH ONE ACCESS DOOR TO BE PROVIDE WITH BREAKAWAY COUPLINGS (WITH STAINLESS STEEL HARDWARE
BREAKAWAY COUPLINGS AS REQUIRED (SUPPLIED BY THE MANUFACTURER)
CONCRETE FOUNDATION
CONNECT NEW LUMINAIRE TO CIRCUITS DESIGNATED
COUPLING
#6 BARE COPPER GROUND CONDUCTOR
2" PVC
2" RGS
GROUND ROD & BONDER GROUND CONDUCTOR TO THE POLE
¾" RGS CONDUIT FOR GROUND
¾" X 10' COPPER GROUND ROD

NOTES:

1. THREE LEVELING BOLTS, AS REQUIRED BY MANUFACTURER CONTRACTOR IS RESPONSIBLE FOR COORDINATING PROPER FIXTURE ORIENTATION.
2. ALL HARDWARE TO BE STAINLESS STEEL.
3. POLE TOP MOUNTING, TENON REDUCER, AS SUGGESTED BY MANUFACTURER.

ROADWAY LIGHTING POLE 'A' AND 'A1' BREAKAWAY BASE DETAIL
N.T.S.

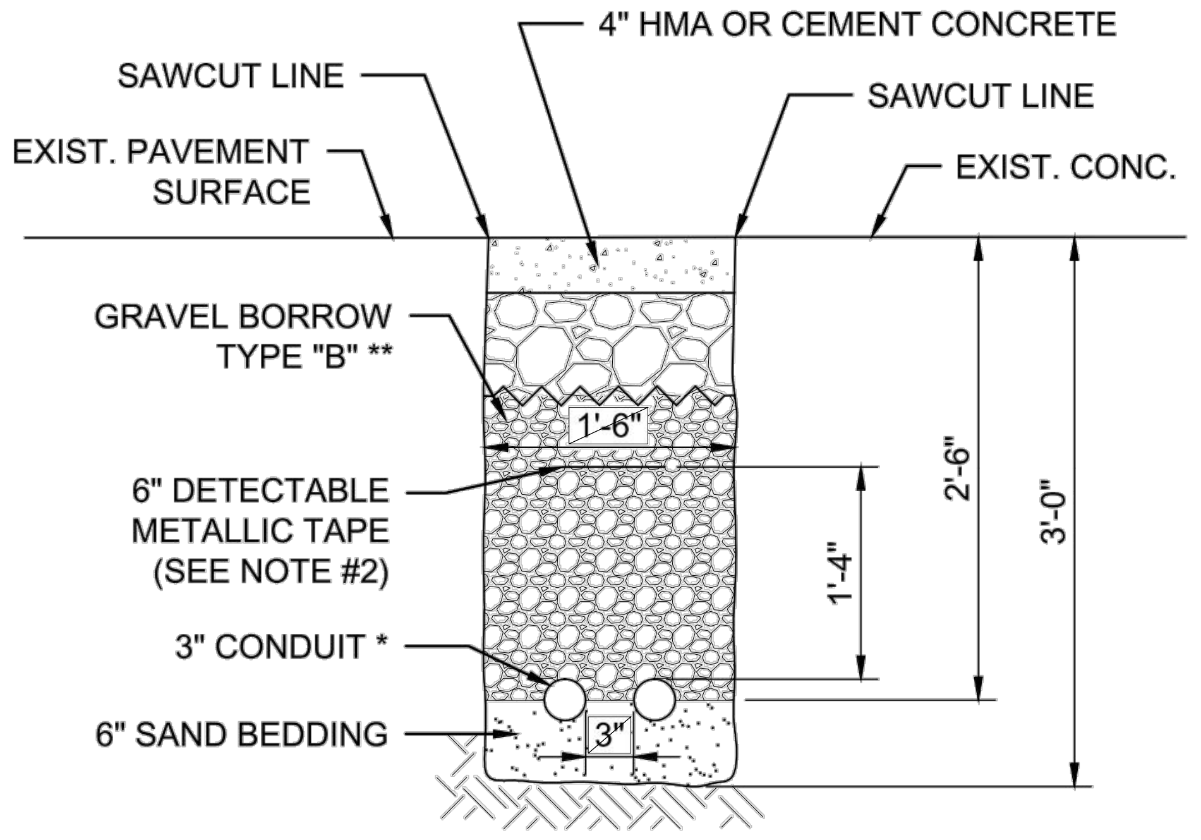


* = UNLESS OTHERWISE NOTED ON PLANS

NOTES:

1. SCHEDULE 80 ELECTRICAL CONDUIT TYPE NM-PLASTIC (WITH PULL ROPE.
2. WARNING TAPE SHALL BE PER CURRENT APWA STANDAF

TRENCH DETAIL (GRASS)
N.T.S.

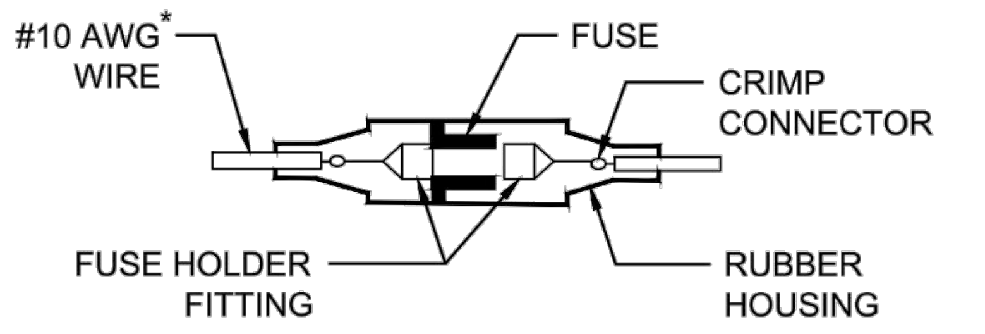


* = UNLESS OTHERWISE NOTED ON PLANS
** = BACKFILL DEEMED SUITABLE CAN BE USED AS BACKFILL WITH THE APPROVAL OF THE ENGINEER.

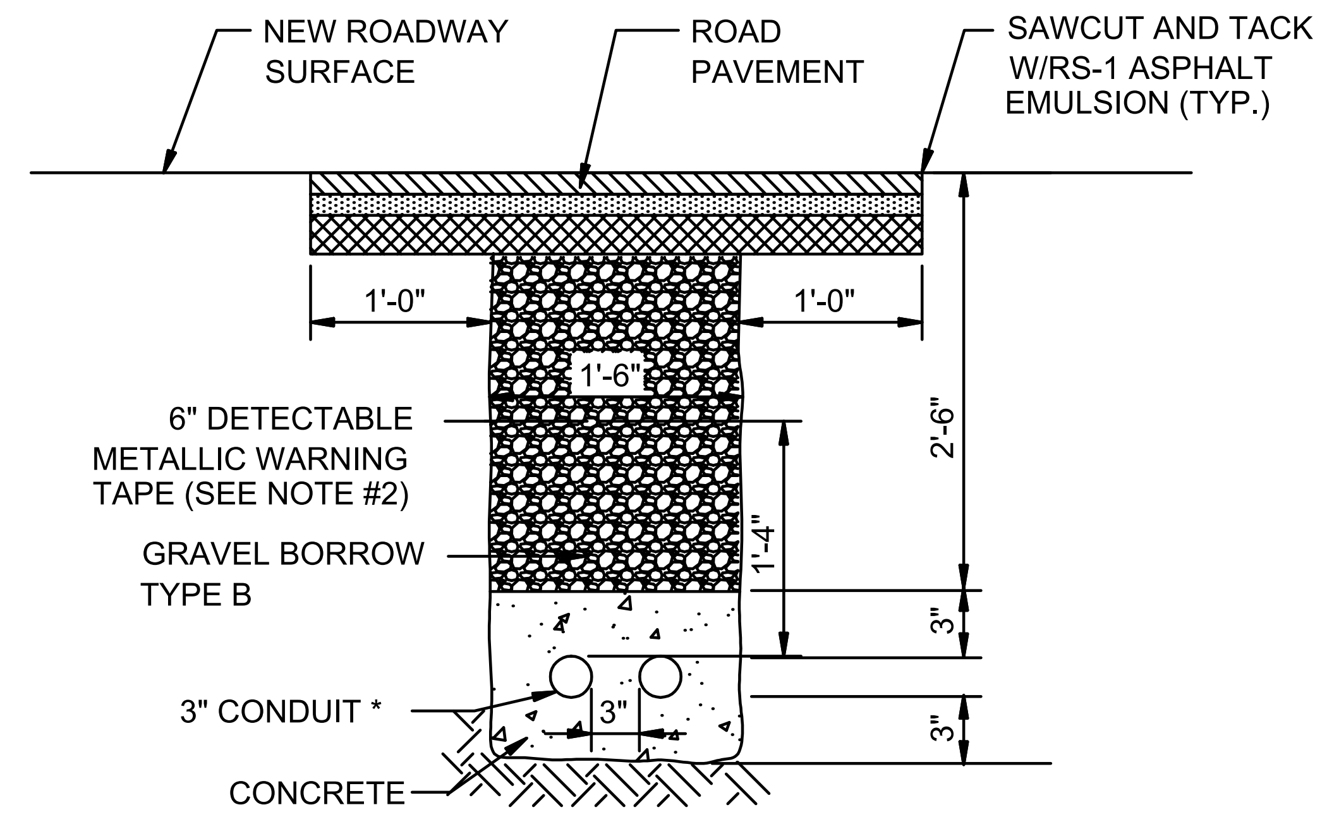
NOTES:

1. SCHEDULE 80 ELECTRICAL CONDUIT TYPE NM-PLASTIC (UL) WITH PULL ROPE.
2. WARNING TAPE SHALL BE PER CURRENT APWA STANDARDS.

TRENCH DETAIL (CONCRETE SIDEWALK)
N.T.S.



FUSE DETAIL FOR HIGHWAY LUMINAIRE
N.T.S.

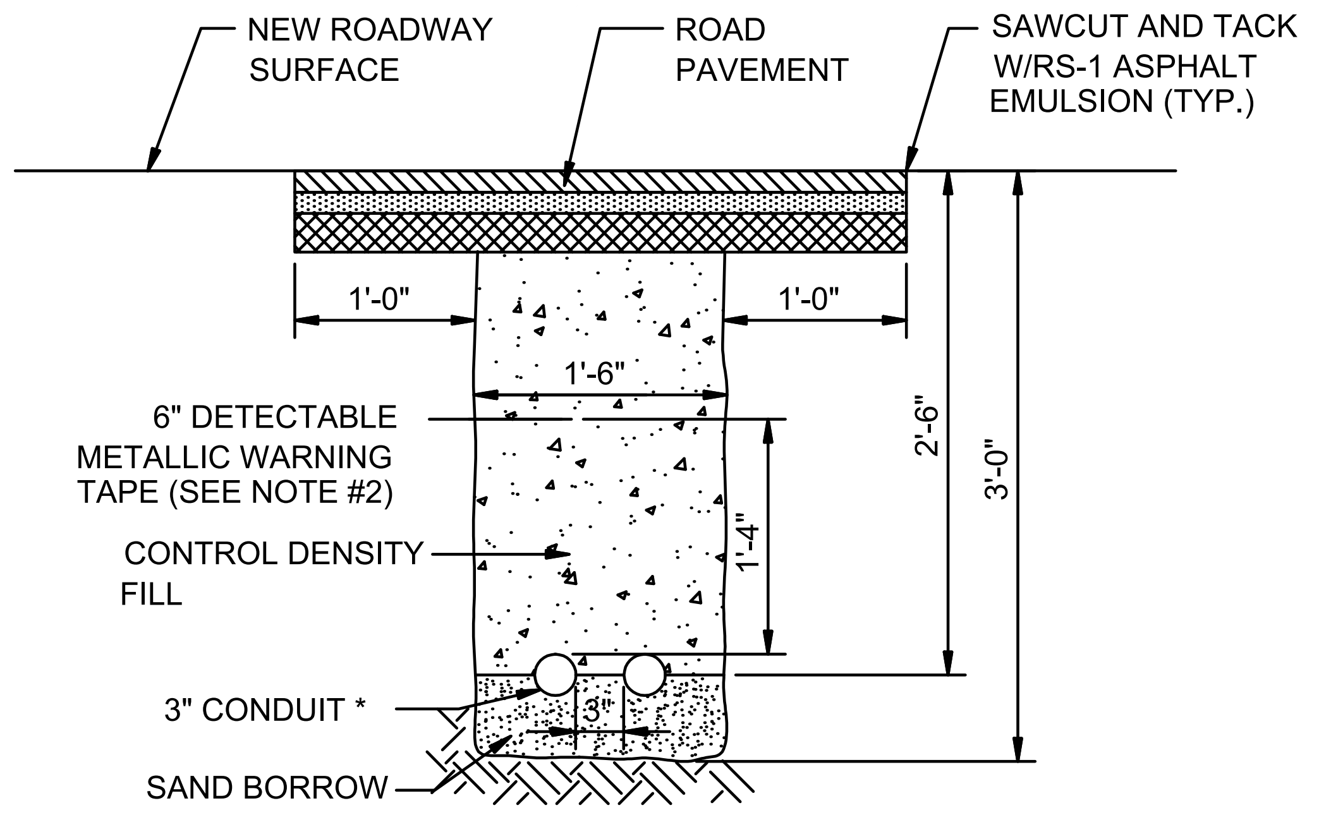


* = UNLESS OTHERWISE NOTED ON PLANS

NOTES:

1. SCHEDULE 80 ELECTRICAL CONDUIT TYPE NM-PLASTIC (UL) WITH PULL ROPE.
2. WARNING TAPE SHALL BE PER CURRENT APWA STANDARDS.

CONCRETE ENCASED TRENCH DETAIL (ASPHALT) - ROADWAY
N.T.S.



* = UNLESS OTHERWISE NOTED ON PLANS

NOTES:

1. SCHEDULE 80 ELECTRICAL CONDUIT TYPE NM-PLASTIC (UL) WITH PULL ROPE.
2. WARNING TAPE SHALL BE PER CURRENT APWA STANDARDS.

TRENCH DETAIL (ASPHALT) - MILL & OVERLAY
N.T.S.

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☼	ROUNDABOUT FIXTURE - TYPE IV
✹	ROADWAY FIXTURE - TYPE III
■	HANDHOLE
⊠	CONTROL CABINET
//////	CONDUIT ROADWAY CROSSING

CHATHAM
MAIN STREET (ROUTE 28) FROM
GEORGE RYDER ROAD TO BARN HILL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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PROJECT FILE NO. 606596			

LIGHTING DETAILS

GENERAL NOTES AND SPECIFICATIONS

1. THE SCOPE OF WORK IS TO PROVIDE ALL LABOR, MATERIALS, SERVICES, SUPPLIES, TOOLS, EQUIPMENT, TRANSPORTATION, AND FACILITIES NECESSARY TO FURNISH AND INSTALL COMPLETE ELECTRICAL WORK AS CALLED FOR ON THE DRAWINGS, SPECIFIED, OR AS MAY REASONABLY BE IMPLIED AS BEING INCIDENTAL TO THIS WORK.
2. SECURE AND PAY COSTS OF PERMITS, CERTIFICATES, LICENSES, INSPECTIONS, AND APPROVALS. ANY POWER OUTAGE SHALL BE SCHEDULED AND APPROVED BY THE OWNER.
3. DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL ARRANGEMENT OF WORK. BASIC DESIGN CONCEPTS INDICATED ARE TO BE EITHER FOLLOWED OR BETTERED. WORK IS INTENDED TO INCLUDE ITEMS NECESSARY FOR PROPER OPERATION AND COMPLETION. FIELD VERIFY ALL LOCATIONS, ELEVATIONS, AND DIMENSIONS.
4. EXECUTE ALL WORK IN A NEAT AND WORKMANLIKE MANNER IN CONFORMANCE WITH BEST MODERN TRADE PRACTICE, BY COMPETENT, EXPERIENCED MECHANICS, PRESENTING A NEAT APPEARANCE WHEN COMPLETED. REPLACE WORK NOT APPROVED BY OWNER WITHOUT ADDITIONAL CHARGE.
5. ALL MATERIALS AND INSTALLATION SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MASSACHUSETTS ELECTRICAL CODE, AND ALL CODES, REGULATIONS, AND REQUIREMENTS OF ALL MUNICIPAL, STATE, FEDERAL AND OTHER PUBLIC OR PRIVATE AUTHORITIES WHICH HAVE JURISDICTION. IN EACH CASE, CODES ARE MINIMUM REQUIREMENTS.
6. SHOP DRAWINGS: SUBMIT COMPLETE CATALOG INFORMATION FOR ALL MATERIALS AND EQUIPMENT TO BE PURCHASED AND USED ON THIS PROJECT, AS SPECIFIED ON THE DRAWINGS. DO NOT INSTALL MATERIALS OR EQUIPMENT WITHOUT APPROVAL BY THE OWNER. UNAPPROVED MATERIAL ALREADY INSTALLED SHALL BE SUBJECT TO REMOVAL AND REPLACEMENT WITH APPROVED MATERIALS AT THE CONTRACTOR'S EXPENSE. THE CONTRACTOR IS RESPONSIBLE FOR INSURING THAT APPROVED SUBSTITUTE ITEMS WILL FIT INTO AVAILABLE SPACES AND FOR ANY EXTRA CHARGES BY OTHER TRADES.
7. AS THERE MAY BE VARIOUS CONDITIONS AT THE SITE WHICH DO NOT SHOW ON THE ACCOMPANYING DRAWINGS, OR WHICH ARE AT VARIANCE WITH THE CONDITIONS INDICATED ON THE DRAWINGS, IT IS IMPORTANT THAT EACH BIDDER VISIT THE SITE AND ACQUAINT HIMSELF WITH EXISTING CONDITIONS AND TAKE THESE CONDITIONS INTO CONSIDERATION WHEN PREPARING HIS BID. EACH BIDDER SHALL OBTAIN INFORMATION OR MAKE ANY MEASUREMENT DESIRED. LACK OF KNOWLEDGE RELATIVE TO EXISTING SITE CONDITIONS WILL NOT BE ALLOWED AS A BASIS FOR EXTRA COMPENSATION.
8. THE FINISHED INSTALLATION SHALL BE COMPLETE IN EVERY ASPECT AND DETAIL, TESTED AND LEFT READY IN PERFECT OPERATING CONDITION FOR THE OWNER'S USE.
9. MATERIALS AND EQUIPMENT SHALL BE LISTED BY UNDERWRITERS' LABORATORIES AND SHALL BE INSTALLED IN ACCORDANCE WITH SUCH LISTINGS.
10. THE CONTRACTOR SHALL GUARANTEE THAT MATERIALS, EQUIPMENT AND WORKMANSHIP PROVIDED SHALL BE FREE FROM DEFECTS IN MATERIALS OR WORKMANSHIP FOR A PERIOD OF ONE YEAR FROM THE DATE OF ACCEPTANCE OF THE WORK DONE UNDER THIS CONTRACT, AND SHALL REPLACE PARTS FOUND TO BE DEFECTIVE WITHIN THE PERIOD COVERED BY SUCH GUARANTEE, WITHOUT COST TO THE OWNER.
11. INSTALLATION SHALL BE MADE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
12. CONTRACTOR SHALL CARRY ALL COSTS RELATING TO REMOVAL AND DISPOSAL OF ALL ELECTRICAL EQUIPMENT, LIGHTING FIXTURES, CONCRETE BASES AND RELATED EQUIPMENT.

GENERAL SITE CONSTRUCTION NOTES:

1. EXISTING LIGHTING TO REMAIN IN PLACE AND OPERATIONAL UNTIL NEW LIGHTING IS INSTALLED.
2. EXISTING UTILITY POLE MOUNTED LIGHT FIXTURES, ASSOCIATED WIRING AND UTILITY POLES SHALL BE REMOVED BY OTHERS. REMOVAL SHALL BE COORDINATED BY CONTRACTOR.
3. WHERE CONDUIT IS TO BE INSTALLED UNDER EXISTING PAVED WALKWAY, PAVEMENT SHALL BE CUT AND PATCHED.
4. LOCATION OF PROPOSED ELECTRICAL SERVICES ARE INTENDED NOT TO DISTURB ROOT SYSTEMS OF EXISTING TREES OR SHRUBS. CONTRACTOR SHALL EXERCISE DUE CARE TO PREVENT DAMAGE THERETO. ALL GRASS AREAS DISTURBED SHALL BE RESTORED TO ROUGH GRADE. TOPSOIL AND GRASS SEEDING SHALL BE DONE BY CONTRACTOR. CONTRACTOR IS RESPONSIBLE FOR REMOVAL, CARE & REPLANTING OF ALL PLANTINGS AND SHRUBS DISTURBED DURING CONSTRUCTION.
5. ALL EXISTING OVERHEAD UTILITIES ARE SHOWN USING THE BEST AVAILABLE RECORD PLAN INFORMATION. EXPLORATORY EXCAVATION BY CONTRACTOR SHALL BE PERFORMED AT ALL POTENTIAL UTILITY CONFLICTS TO LOCATE EXISTING UTILITIES, PRIOR TO INSTALLATION OF UNDERGROUND CONDUITS, DUCTBANKS, AND BASES. CONTRACTOR IS RESPONSIBLE FOR PROTECTION OF ALL UTILITIES WHETHER OR NOT THEY ARE SHOWN ON THE PLANS. ALL REPAIRS TO DAMAGED UTILITIES SHALL BE MADE BY THE CONTRACTOR USING MATERIALS APPROVED BY THE ENGINEER AT NO ADDITIONAL EXPENSE TO THE OWNER.
6. CONTRACTOR TO CONTACT DIG SAFE AT 1-888-DIG-SAFE, PRIOR TO COMMENCING WORK. CONTRACTOR SHALL VERIFY LOCATION OF ALL OVERHEAD AND UNDERGROUND ELECTRIC AND TELEPHONE LINES AND TAKE NECESSARY PRECAUTIONS IN STRICT ACCORDANCE WITH OSHA STANDARDS DURING CONSTRUCTION. CONTRACTOR SHALL CONTACT LOCAL ELECTRICAL, CABLE AND TELEPHONE UTILITIES REGARDING ANY NECESSARY SUPPORT OF ANY UTILITY POLES DURING CONSTRUCTION. CONTRACTOR IS RESPONSIBLE FOR THE SUPPORT OR TEMPORARY RELOCATION OF ALL UTILITY POLES AFFECTED BY THE CONSTRUCTION.
7. ENTRY TO ANY AREAS OF CONSTRUCTION INCLUDING HOLES TRENCHED, PILES OF FILL MATERIAL, CONSTRUCTION MATERIALS, AND ANY OTHER CONSTRUCTION HAZARDS. BARRIERS SHALL BE PROVIDED AT ALL HOURS AND SHALL CLEARLY INDICATE THE AREA NOT TO BE TRESPASSED.
8. ALL WIRE SHALL BE TYPE 8 DIRECT BURIAL (INCLUDES POWER AND LIGHTING DISTRIBUTION SYSTEMS IN DUCT OR OTHER ELECTRICAL WIRE AND CABLE RACEWAYS) WITH A MINIMUM WIRE SIZE OF #6 AWG FOR SUPPLY FEEDS BETWEEN HANDHOLES AND #10 AWG FOR LATERAL LIGHTING FEEDS BETWEEN HANDHOLE AND STREET LIGHT FIXTURE.

LUMINAIRE SCHEDULE

LUMNAIRE	QUANTITY	MANUFACTURER	CATALOG NUMBER	DESCRIPTION	LUMENS PER LAMP	WATTAGE	DISTRIBUTION TYPE
☼ A	11	STERNBERG	1531LED-10ARC45T4-MDL03-FG	LED LUMINAIRE - SINGLE HEAD ROUNDABOUT	16,245	157	4
EQUAL		HOLOPHAN	GBLF2-P60-40K-L4	LED LUMINAIRE - SINGLE HEAD ROUNDABOUT	15,127	145	4
EQUAL		DECO LIGHITNG	D809-LED -14O-T3-5K	LED LUMINAIRE - SINGLE HEAD ROUNDABOUT	15,288	140	4
✹ A1	10	STERNBERG	1531LED-10ARC453R-MDL03-FG	LED LUMINAIRE - SINGLE HEAD ROADWAY	16,300	157	3R
EQUAL		HOLOPHAN	GBLF2-P60-40K-L3	LED LUMINAIRE - SINGLE HEAD ROADWAY	15,127	145	3
EQUAL		DECO LIGHITNG	D809-LED -14O-T3-5K	LED LUMINAIRE - SINGLE HEAD ROUNDABOUT	15,288	140	3

STREET LIGHTING SCHEDULE

POLE NO.	FIXTURE TYPE	STATION	LENGTH OF POLE ARM	BREAK-AWAY	LUMINAIRE WATTS	LUMINAIRE LUMENS	TYPE	MOUNTING HEIGHT	POLE TYPE	BASE TYPE	LOCATION	PNL/CKT	REMARKS
P-1	A	300+97	72"	YES	126	16,300	IV	25'	ALUMINUM	CONC	MAIN ST. ROUNDABOUT	LP-1(L) LP-3(R)	ARM MTD AT 25' ON 27' POLE
P-2	A	300+56	72"	YES	126	16,300	IV	25'	ALUMINUM	CONC	MAIN ST. ROUNDABOUT	LP-2(L) LP-4(R)	ARM MTD AT 25' ON 27' POLE
P-3	A	105+35	72"	YES	126	16,300	IV	25'	ALUMINUM	CONC	MAIN ST. ROUNDABOUT	LP-1(L) LP-3(R)	ARM MTD AT 25' ON 27' POLE
P-4	A	104+21	72"	YES	126	16,300	IV	25'	ALUMINUM	CONC	MAIN ST. ROUNDABOUT	LP-2(L) LP-4(R)	ARM MTD AT 25' ON 27' POLE
P-5	A	105+31	72"	YES	126	16,300	IV	25'	ALUMINUM	CONC	MAIN ST. ROUNDABOUT	LP-1(L) LP-3(R)	ARM MTD AT 25' ON 27' POLE
P-6	A1	105+78	72"	YES	126	16,245	III	25'	ALUMINUM	CONC	MAIN ST. ROUNDABOUT	LP-2(L) LP-4(R)	ARM MTD AT 25' ON 27' POLE
P-7	A1	106+57	72"	YES	126	16,245	III	25'	ALUMINUM	CONC	MAIN STREET	LP-1(L) LP-3(R)	ARM MTD AT 25' ON 27' POLE
P-8	A1	107+37	72"	YES	126	16,245	III	25'	ALUMINUM	CONC	MAIN STREET	LP-2(L) LP-4(R)	ARM MTD AT 25' ON 27' POLE
P-9	A1	108+29	72"	YES	126	16,245	III	25'	ALUMINUM	CONC	MAIN STREET	LP-1(L) LP-3(R)	ARM MTD AT 25' ON 27' POLE
P-10	A1	109+27	72"	YES	126	16,245	III	25'	ALUMINUM	CONC	MAIN STREET	LP-2(L) LP-4(R)	ARM MTD AT 25' ON 27' POLE
P-11	A1	110+23	72"	YES	126	16,245	III	25'	ALUMINUM	CONC	MAIN STREET	LP-5(L) LP-7(R)	ARM MTD AT 25' ON 27' POLE
P-12	A1	111+19	72"	YES	126	16,245	III	25'	ALUMINUM	CONC	MAIN STREET	LP-6(L) LP-8(R)	ARM MTD AT 25' ON 27' POLE
P-13	A1	112+08	72"	YES	126	16,245	III	25'	ALUMINUM	CONC	MAIN STREET	LP-5(L) LP-7(R)	ARM MTD AT 25' ON 27' POLE
P-14	A1	112+97	72"	YES	126	16,245	III	25'	ALUMINUM	CONC	MAIN STREET	LP-6(L) LP-8(R)	ARM MTD AT 25' ON 27' POLE
P-15	A1	113+88	72"	YES	126	16,245	III	25'	ALUMINUM	CONC	MAIN STREET	LP-5(L) LP-7(R)	ARM MTD AT 25' ON 27' POLE
P-16	A	114+81	72"	YES	126	16,300	IV	25'	ALUMINUM	CONC	MAIN ST. ROUNDABOUT	LP-6(L) LP-8(R)	ARM MTD AT 25' ON 27' POLE
P-17	A	115+26	72"	YES	126	16,300	IV	25'	ALUMINUM	CONC	MAIN ST. ROUNDABOUT	LP-5(L) LP-7(R)	ARM MTD AT 25' ON 27' POLE
P-18	A	116+10	72"	YES	126	16,300	IV	25'	ALUMINUM	CONC	MAIN ST. ROUNDABOUT	LP-6(L) LP-8(R)	ARM MTD AT 25' ON 27' POLE
P-19	A	115+96	72"	YES	126	16,300	IV	25'	ALUMINUM	CONC	MAIN ST. ROUNDABOUT	LP-5(L) LP-7(R)	ARM MTD AT 25' ON 27' POLE
P-20	A	200+94	72"	YES	126	16,300	IV	25'	ALUMINUM	CONC	MAIN ST. ROUNDABOUT	LP-6(L) LP-8(R)	ARM MTD AT 25' ON 27' POLE
P-21	A	200+39	72"	YES	126	16,300	IV	25'	ALUMINUM	CONC	MAIN ST. ROUNDABOUT	LP-5(L) LP-7(R)	ARM MTD AT 25' ON 27' POLE

606596_UT(LIGHTING DETAILS).DWG   Plotted on 30-Mar-2018 2:15 PM

CHATHAM
MAIN STREET (ROUTE 28) FROM GEORGE RYDER ROAD TO BARN HILL ROAD

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LANDSCAPE PLANS

Plotted on 30-Mar-2018 2:15 PM

606596_LD(LANDSCAPE PLAN).DWG

PLANTING SCHEDULE/LEGEND

SYMBOL	ABBREVIATIONS	QTY.	LATIN NAME	COMMON NAME	SIZE	NOTES
▨	SS	205	SCHIZACHARIUM SCOPARIUM	LITTLE BLUESTEM GRASS	1 GAL.	PLANT 18" O.C., TRIANGULATED
	SH	16	SPOROBOLUS HETEROLEPIS	PRAIRIE DROPSEED	1 GAL.	
⊙	EP	12	ECHINACEA PURPUREA	PURPLE CONEFLOWER	2 QUART	
	AMC	3	AMELANCHIER CANADENSIS	SERVICEBERRY - SHADBLOW	6 - 8 FT.	
	MP	4	MYRICA PENSYLVANICA	NORTHERN BAYBERRY	2-3 FT.	SPACING 4.5' ON CENTER
▩	LS	181	LIRIOPE SPICATA	LILYTURF	2 QUART.	
	SP	20	SPIRAEA X BUMALDA - 'ANTHONY WATERER'	SPIREA - 'ANTHONY WATERER'	2-3 FT.	
▦	HAS	45	HEMEROCALLIS 'APRICOT SPARKLES'	APRICOT SPARKLES DAYLILY	1 GAL.	SPACING 1.5' ON CENTER
▦	HGB	45	HEMEROCALLIS 'GOING BANANAS'	GOING BANANAS DAYLILY	1 GAL.	SPACING 1.5' ON CENTER
▦	HRR	45	HEMEROCALLIS 'ROSY RETURNS'	ROSY RETURNS DAYLILY	1 GAL.	SPACING 1.5' ON CENTER

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LANDSCAPE PLANS

606596_LD(LANDSCAPE PLAN).DWG Plotted on 30-Mar-2018 2:16 PM

N
N/F NEW CREEK II LLC MAP 8E, LOT 52-27A BK.25979, PG.95
N/F THE SUMNER G. N. HARDING TRUST OF 1997 THE JEAN C. HARDING TRUST OF 1997 MAP 8E, LOT 53-27 BK.11030, PG.34
N/F THE SUMNER G.N. HARDING TRUST OF 1997 MAP 8E, LOT 1-H3 BK.11030, PG.33
N/F THE SUMNER G. N. HARDING TRUST OF 1997 THE JEAN C. HARDING TRUST OF 1997 MAP 9E, LOT 1-11 BK.11030, PG.34
N/F TOWN OF CHATHAM MAP 9E, LOT 2-10 BK.15361, PG.181
1 STORY WOOD #1652
1 1/2 STORY WOOD #1620
BIT. CONC. PARKING LOT
WOODED AREA
BRUSH AREA
1927 STATE HIGHWAY LAYOUT (NO. 2414)
PCC +11.80
PT +44.03
106
107
108
109
110
111
112
MAIN STREET PUBLIC - 60' WIDE
CONTINUED ON SHEET NO. 70
CONTINUED ON SHEET NO. 72
SEAQUANSET ROAD PUBLIC - 35' WIDE
1960 TOWN LAYOUT
3' CEDAR RAIL FENCE
4' CHAIN LINK FENCE
N/F FM NOMINEE REALTY TRUST MAP 8D, LOT 48A-R42 BK.11513, PG.285
N/F SEAQUANSET REALTY TRUST MAP 8D, LOT 51-R45 BK.12199, PG.73
N/F LOWER CAPE VENTURES, LLC MAP 8D, LOT 1-8 BK.19749, PG.3
VACANT BUSINESS 1 STORY WOOD #1629
VACANT BUSINESS 1 STORY WOOD #16
N/F BOTSOLIS FAMILY REALTY TRUST MAP 9D, LOT 45-14B BK.22936, PG.8
N/F BARN HILL PROPERTIES, INC MAP 9D, LOT 44-12A BK.20908, PG.180
OLLIE'S RESTAURANT 2 STORY WOOD #1603
GRAVEL DRIVE
PORCH
15 SS
15 SH
15 SS
7 SN 16 RH
15 SH
1 SR
8 SN 14 RH
15 SP
1 AC
1 SR
26 SS
22 SH
12 SP
1 AC
6 SN 12 RH
1 SR
9 SS
9 SH
1 AC
4 SP
10 SS
10 SH
1 SR
4 SN 10 RH
1 AC
10 SS
10 SH
1 SR
6 SP
1 SR
0 20 50 100
SCALE: 1" = 20'

PLANTING SCHEDULE/LEGEND						
SYMBOL	ABBREVIATIONS	QTY.	LATIN NAME	COMMON NAME	SIZE	NOTES
⊕	SR	6	SYRINGA RETICULATA 'SNOW IN SUMMER'	JAPANESE TREE LILAC	2-2.5" CAL.	
⊕	AC	4	ACER CAMPESTRE	HEDGE MAPLE	2" CAL.	
▨	SS	85	SCHIZACHARIUM SCOPARIUM	LITTLE BLUESTEM GRASS	1 GAL.	PLANT 18" O.C., TRIANGULATED
▨	SH	81	SPOROBOLUS HETEROLEPIS	PRAIRIE DROPSEED	1 GAL.	
▨	SP	37	SPIRAEA X BUMALDA - 'ANTHONY WATERER'	SPIREA - 'ANTHONY WATERER'	2-3 FT.	
▨	SN	25	SYMPHYOTRICHUM NOVAE-ANGLIAE	NEW ENGLAND ASTER	1 GAL.	
▨	RH	52	RUDBECKIA HIRTA	BLACK EYED SUSAN	2 QUART	

CHATHAM
MAIN STREET (ROUTE 28) FROM GEORGE RYDER ROAD TO BARN HILL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	72	109
	PROJECT FILE NO.	606596	

LANDSCAPE PLANS

PLANTING SCHEDULE/LEGEND						
SYMBOL	ABBREVIATIONS	QTY.	LATIN NAME	COMMON NAME	SIZE	NOTES
▨	SS	140	SCHIZACHARIUM SCOPARIUM	LITTLE BLUESTEM GRASS	1 GAL.	PLANT 18" O.C., TRIANGULATED
✿	SH	20	SPOROBOLUS HETEROLEPIS	PRAIRIE DROPSEED	1 GAL.	
⊕	SR	2	SYRINGA RETICULATA 'SNOW IN SUMMER'	JAPANESE TREE LILAC	2-2.5" CAL.	LOWEST BRANCHES AT 7' HT.
⊕	AC	2	ACER CAMPESTRE	HEDGE MAPLE	2" CAL.	
⊕	AMC	3	AMELANCHIER CANADENSIS	SERVICEBERRY - SHADBLOW	6 - 8 FT.	
▩	LS	191	LIRIOPE SPICATA	LILYTURF	2 QUART.	
▨	SP	9	SPIRAEA X BUMALDA - 'ANTHONY WATERER'	SPIREA - 'ANTHONY WATERER'	2-3 FT.	
▨	SN	8	SYMPHYOTRICHUM NOVAE-ANGLIAE	NEW ENGLAND ASTER	1 GAL.	
▨	RH	12	RUDBECKIA HIRTA	BLACK EYED SUSAN	2 QUART	
●	HAS	45	HEMEROCALLIS 'APRICOT SPARKLES'	APRICOT SPARKLES DAYLILY	1 GAL.	SPACING 1.5' ON CENTER
●	HGB	45	HEMEROCALLIS 'GOING BANANAS'	GOING BANANAS DAYLILY	1 GAL.	SPACING 1.5' ON CENTER
●	HRR	45	HEMEROCALLIS 'ROSY RETURNS'	ROSY RETURNS DAYLILY	1 GAL.	SPACING 1.5' ON CENTER

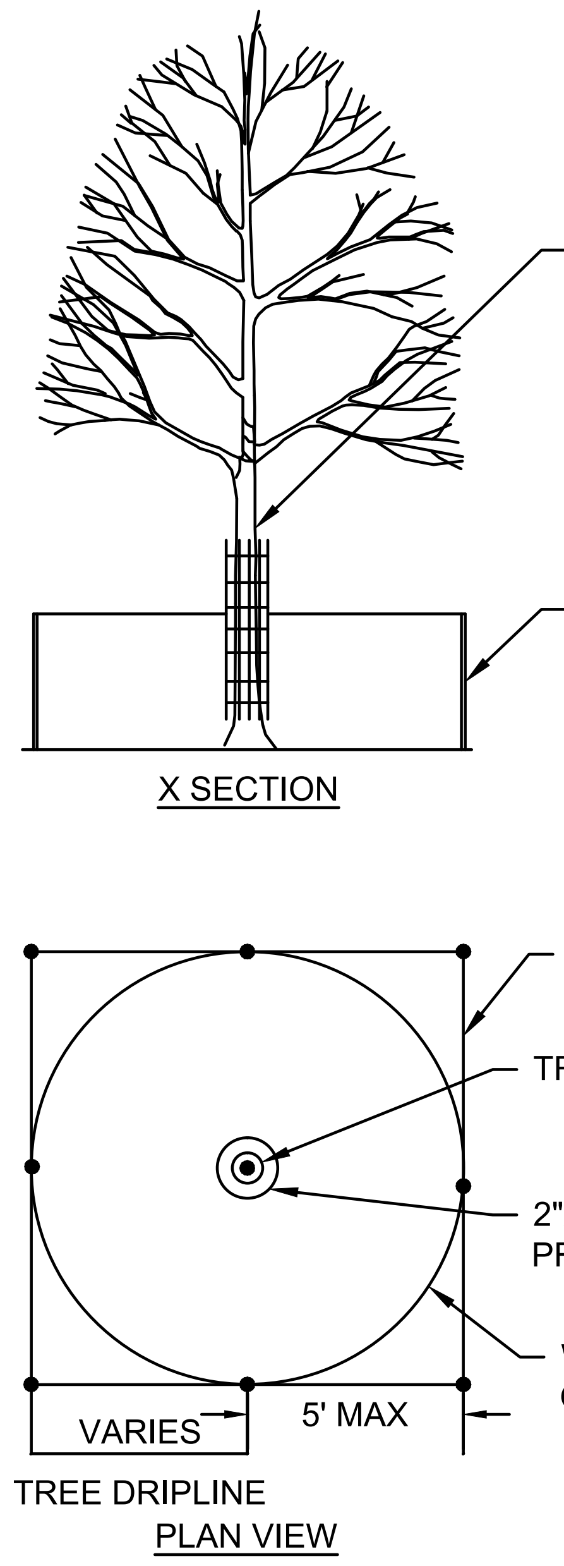
CHATHAM
MAIN STREET (ROUTE 28) FROM GEORGE RYDER ROAD TO BARN HILL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	73	109
PROJECT FILE NO.		606596	

CONSTRUCTION DETAILS

MASTER PLANT LIST

SYMBOL	ABBREVIATIONS	QTY.	LATIN NAME	COMMON NAME	SIZE	NOTES
⊕	SR	6	SYRINGA RETICULATA 'SNOW IN SUMMER'	JAPANESE TREE LILAC	2-2.5" CAL.	
⊕	AC	4	ACER CAMPESTRE	HEDGE MAPLE	2" CAL.	
▨	SS	447	SCHIZACHARIUM SCOPARIUM	LITTLE BLUESTEM GRASS	1 GAL.	PLANT 18" O.C., TRIANGULATED
▨	SH	161	SPOROBOLUS HETEROLEPIS	PRAIRIE DROPSEED	1 GAL.	
⊙	EP	25	ECHINACEA PURPUREA	PURPLE CONEFLOWER	2 QUART	
⊕	QC	4	QERCUS COCCINEA	SCARLET OAK	2-2.5" CAL.	LOWEST BRANCHES AT 7' HT.
⊕	AMC	6	AMELANCHIER CANADENSIS	SERVICEBERRY - SHADBLOW	6 - 8 FT.	
⊕	MP	24	MYRICA PENSYLVANICA	NORTHERN BAYBERRY	2-3 FT.	SPACING 4.5' ON CENTER
▩	LS	372	LIRIOPE SPICATA	LILYTURF	2 QUART.	
▨	SP	66	SPIRAEA X BUMALDA - 'ANTHONY WATERER'	SPIREA - 'ANTHONY WATERER'	2-3 FT.	
▨	SN	33	SYMPHYOTRICHUM NOVAE-ANGLIAE	NEW ENGLAND ASTER	1 GAL.	
▨	RH	66	RUDBECKIA HIRTA	BLACK EYED SUSAN	2 QUART	
▩	HAS	90	HEMEROCALLIS 'APRICOT SPARKLES'	APRICOT SPARKLES DAYLILY	1 GAL.	SPACING 1.5' ON CENTER
▩	HGB	90	HEMEROCALLIS 'GOING BANANAS'	GOING BANANAS DAYLILY	1 GAL.	SPACING 1.5' ON CENTER
▩	HRR	90	HEMEROCALLIS 'ROSY RETURNS'	ROSY RETURNS DAYLILY	1 GAL.	SPACING 1.5' ON CENTER



INSTALL AT 6"OC:2"x4"X6'-0" WOOD BOARD TRUNK PROTECTION. SECURE TO TREE WITHOUT DAMAGE TO TRUNK OR BARK. MAINTAIN THROUGHOUT CONSTRUCTION. REMOVE AT TIME OF PROJECT COMPLETION

RED, WOOD LATH SNOW FENCE STAKED 5'-0" O.C. MAXIMUM WITH PRESSED METAL DRIVE STAKES (SEE SPECS). HAND EXCAVATE WITHIN THIS ZONE. REMOVAL ONLY UPON APPROVAL OF ENGINEER

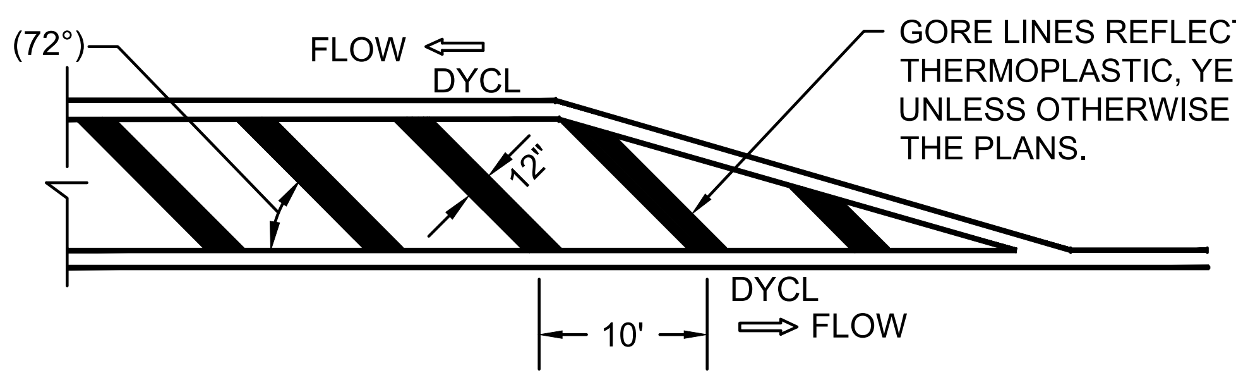
DO NOT STORE ANY MACHINERY OR MATERIALS WITHIN AREA OF THE SNOW FENCE

TREE

2"x4"x6'-0" TRUNK PROTECTION

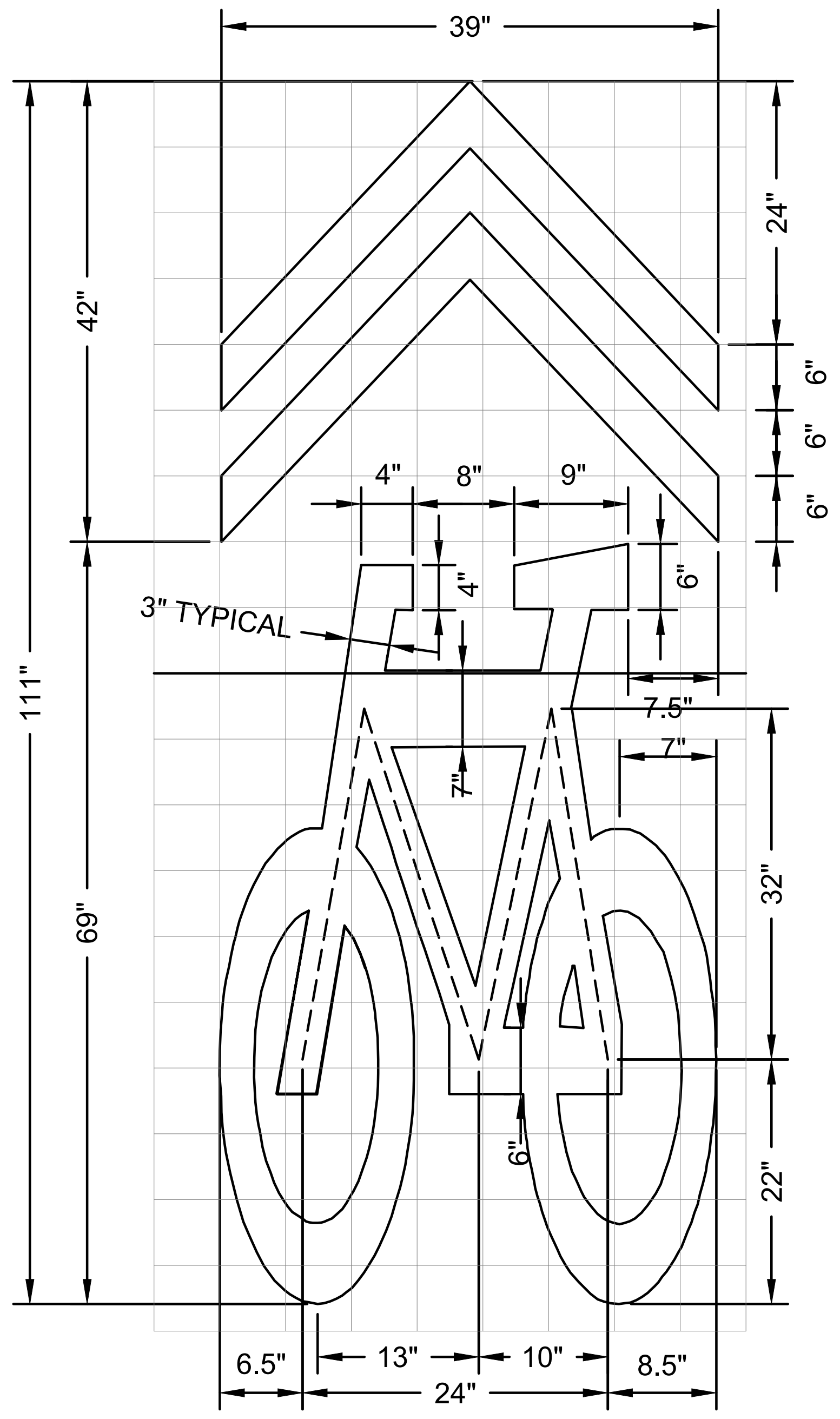
WOOD LATH SNOW FENCE OUTSIDE OF DRIP LINE OF TREE

TREE PROTECTION
NOT TO SCALE



GORE LINES REFLECTORIZED THERMOPLASTIC, YELLOW UNLESS OTHERWISE NOTED ON THE PLANS.

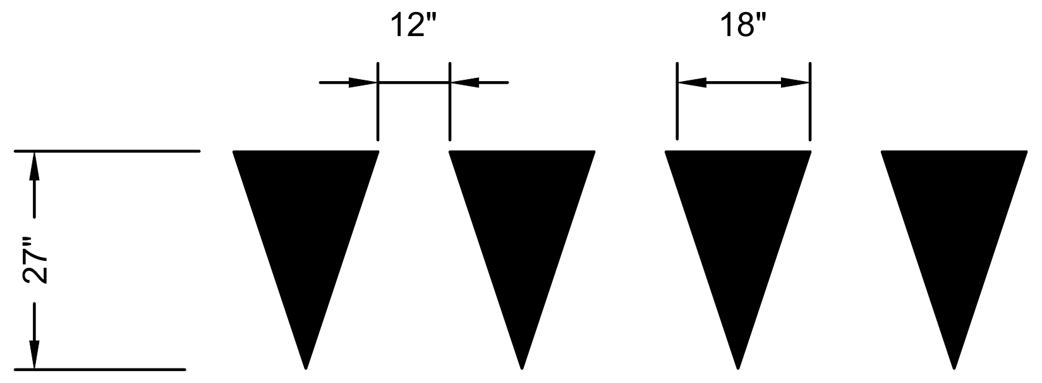
STANDARD CROSS-HATCHING
NOT TO SCALE



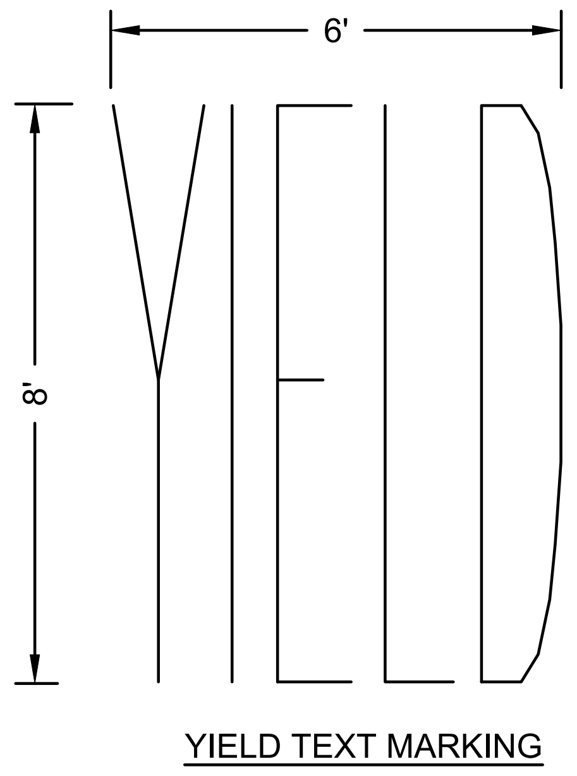
SHARED LANE SYMBOL PLACEMENT NOTES:

1. IN LOCATIONS WITH ON-STREET PARKING, SHARED LANE MARKING SYMBOLS SHALL BE PLACED SO THAT THE CENTER IS A MINIMUM OF 11 FEET FROM THE ADJACENT FACE OF CURB.
2. IN LOCATIONS WITHOUT ON-STREET PARKING, SHARE LANE MARKING SYMBOLS SHALL BE PLACED SO THAT THE CENTER IS 4 FEET FROM THE ADJACENT FACE OF CURB.
3. IF LOCATED IN A TURN LANE, SHARED LANE MARKING SYMBOLS SHALL BE CENTERED IN THE LANE.
4. DO NOT PLACE SYMBOLS ON LANE LINES.
5. SHARED LANE SYMBOLS SHALL BE PLACED A MAXIMUM OF 500 FEET APART.

SHARED LANE SYMBOL DETAIL
NOT TO SCALE



YIELD SYMBOLS (SHARK TEETH)
NOT TO SCALE



NOTES:
1. LETTER WIDTH AND SPACING VARIES.

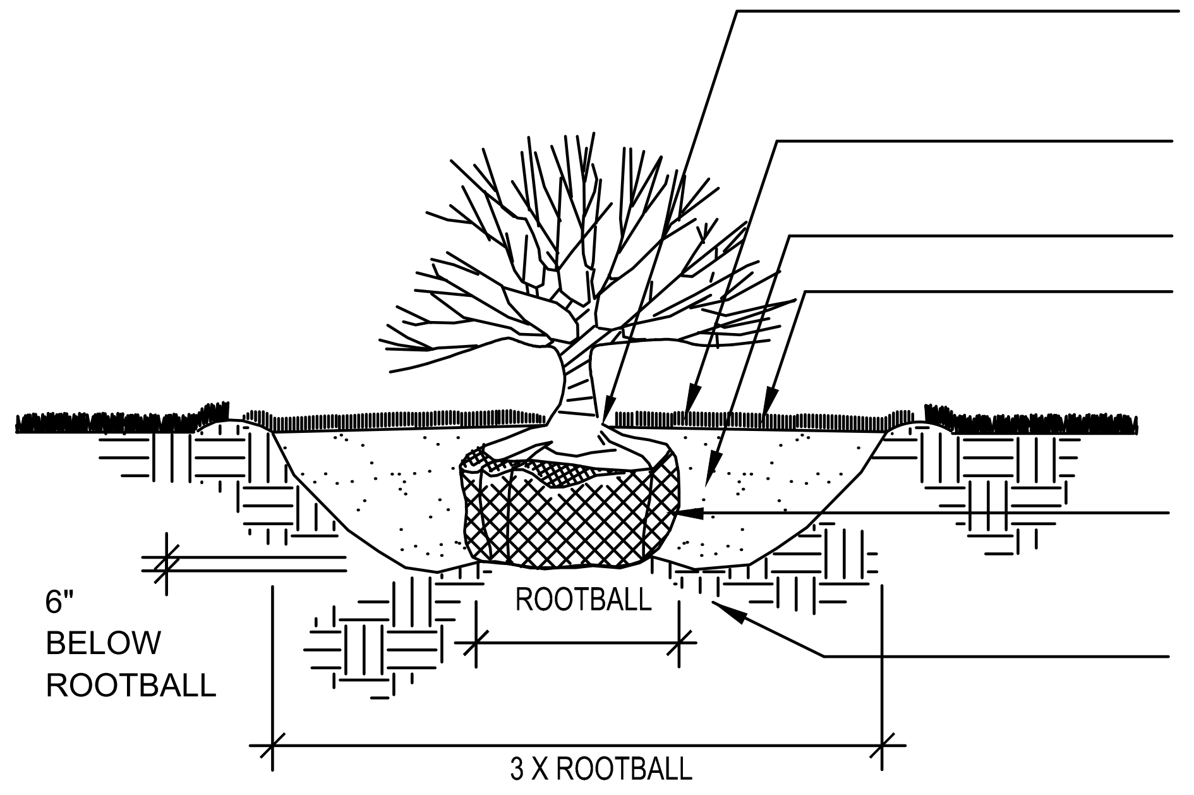
YIELD TEXT MARKING
NOT TO SCALE

RAISE AND REPLANT ANY SHRUBS WHICH SETTLE MORE THAN 2 INCHES AFTER PLANTING & WATERING IN

SHRUBS SHALL BE SET PLUMB

WATER BY FLOODING TWICE IN FIRST TWO HOURS AFTER PLANTING. WATER & MAINTAIN AS PER STANDARD SPECIFICATIONS

EXCAVATE TO REQUIRED DEPTH AND BACKFILL WITH PLANTING MIX



SHRUB SHALL BE PLANTED SO THAT CROWN IS 2 INCH MIN. ABOVE FINISHED GRADE AFTER SETTLEMENT

2-3 INCH DEPTH AGED PINE BARK MULCH (PULL AWAY FROM BASE OF SHRUB)

BACKFILL MIX PER SPECIAL PROVISIONS

3 INCH HIGH EARTH WATERING SAUCER AROUND PIT

COMPLETELY REMOVE SYNTHETIC BURLAP AND LACING. FOR CONTAINERIZED PLANTS, REMOVE CONTAINER PRIOR TO PLANTING

UNDISTURBED SUBGRADE

LOOSE OR CRACKED ROOTBALLS WILL NOT BE ACCEPTED FOR PLANTING

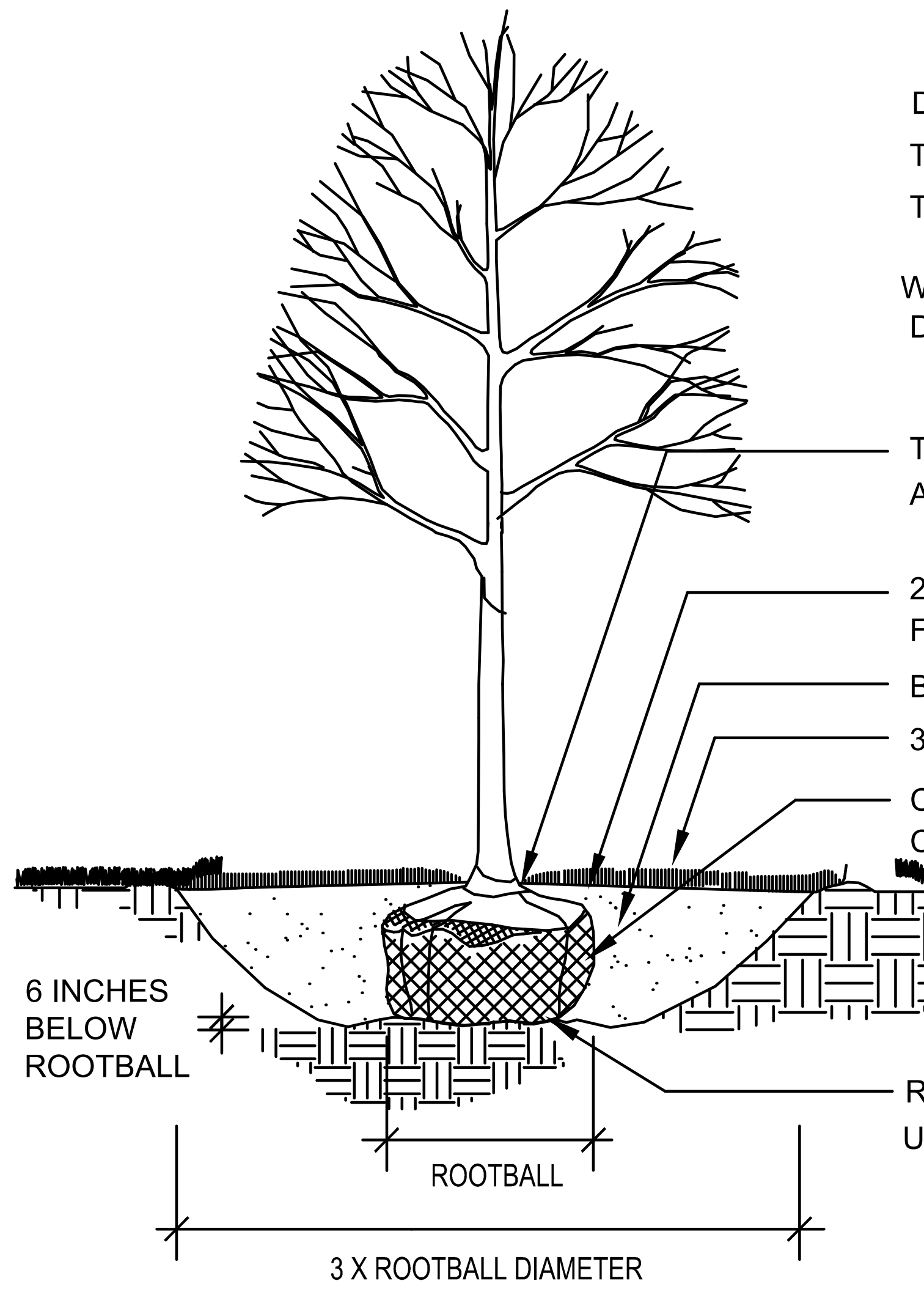
SHRUB PLANTING
NOT TO SCALE

DO NOT CUT LEADER

TREE WRAP SHALL NOT BE USED

TREE SHALL BE SET PLUMB

WATERING SAUCER SHALL BE FLOODED TWICE DURING THE FIRST 24 HOURS AFTER PLANTING



TREE SHALL BE PLANTED SO THAT CROWN IS 3 INCHES ABOVE FINISHED GRADE AFTER SETTLEMENT

2-3 INCHES AGED PINE BARK MULCH (PULL MULCH AWAY FROM TRUNK OF TREE)

BACKFILL MIX PER SPECIAL PROVISIONS

3 INCH HIGH EARTH WATERING SAUCER AROUND TREE PIT

CUT & ROLL BACK 1/3 OF BURLAP BEFORE BACKFILLING. COMPLETELY REMOVE SYNTHETIC BURLAP & LACING, REMOVE WIRE BASKETS COMPLETELY.

ROOTBALL SHALL BE PLACED ON UNDISTURBED SUBGRADE

DECIDUOUS TREE PLANTING
NOT TO SCALE

Plotted on 30-Mar-2018 2:16 PM

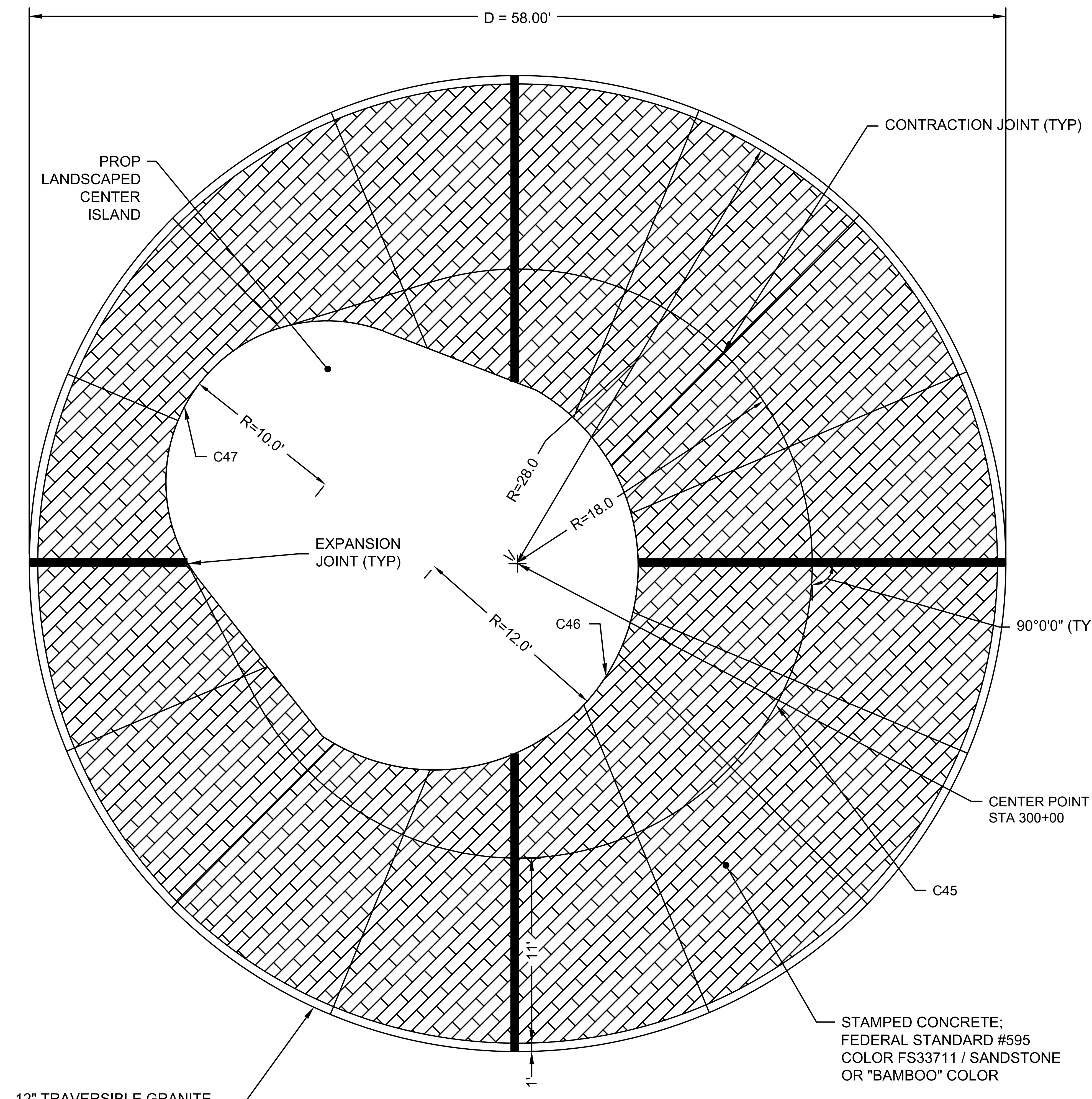
606596_HD(CONST DET).DWG

CHATHAM
MAIN STREET (ROUTE 28) FROM
GEORGE RYDER ROAD TO BARN HILL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	74	109
	PROJECT FILE NO.	606596	

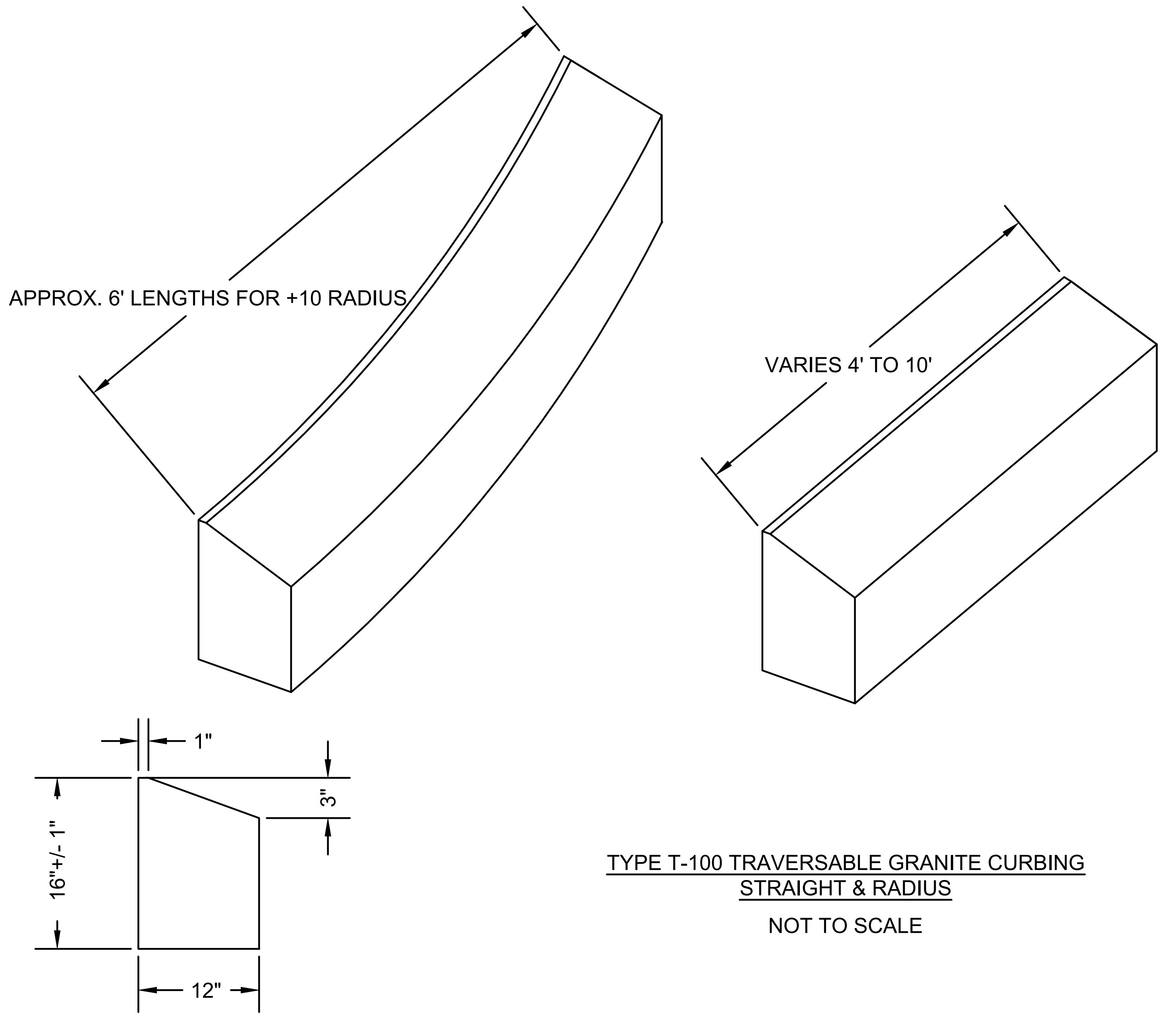
CONSTRUCTION DETAILS

606596_HD(CONST DET).DWG Plotted on 30-Mar-2018 2:16 PM

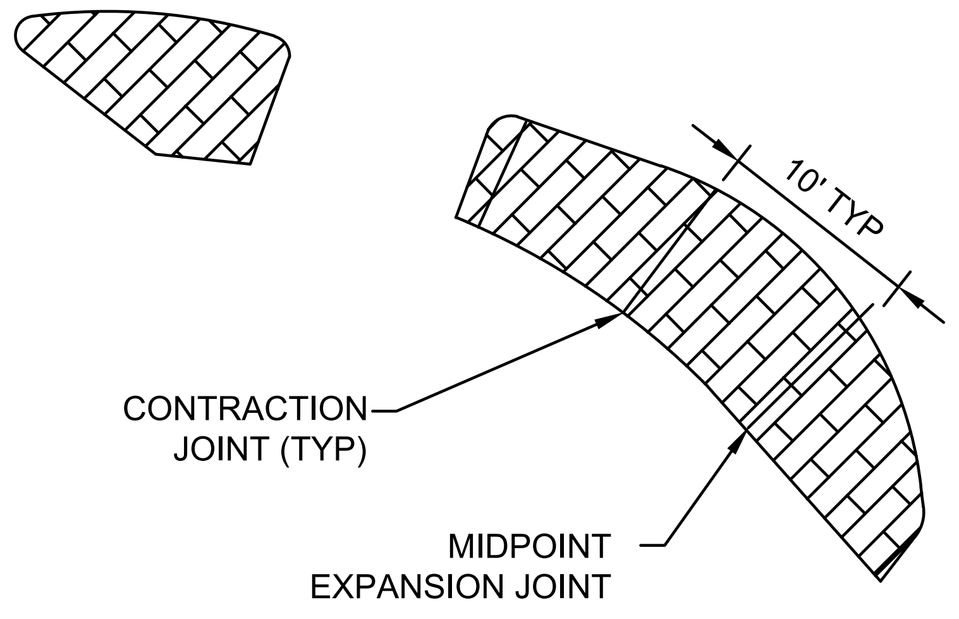


D = 58.00'
PROP LANDSCAPED CENTER ISLAND
CONTRACTION JOINT (TYP)
R=10.0'
C47
R=28.0
R=18.0
EXPANSION JOINT (TYP)
R=12.0'
C46
90°0'0" (TYP)
CENTER POINT STA 300+00
C45
1'
1'
STAMPED CONCRETE; FEDERAL STANDARD #595 COLOR FS33711 / SANDSTONE OR "BAMBOO" COLOR
12" TRAVERSIBLE GRANITE CURBING, TYPE T-100

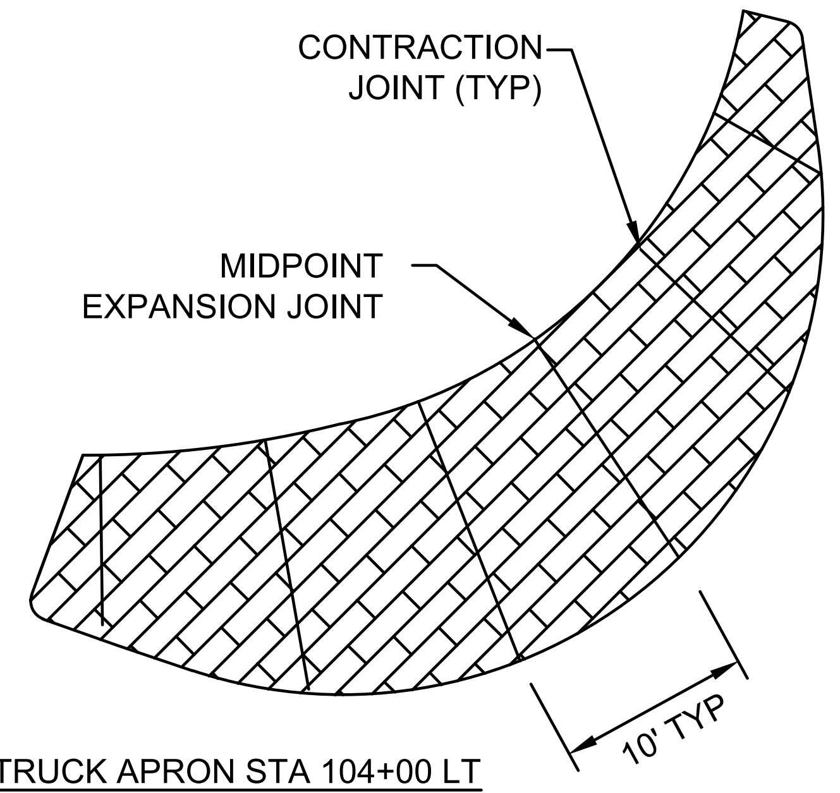
TRUCK APRON JOINTING PLAN
GEORGE RYDER ROAD ROUNDABOUT
SCALE: 1" = 5'



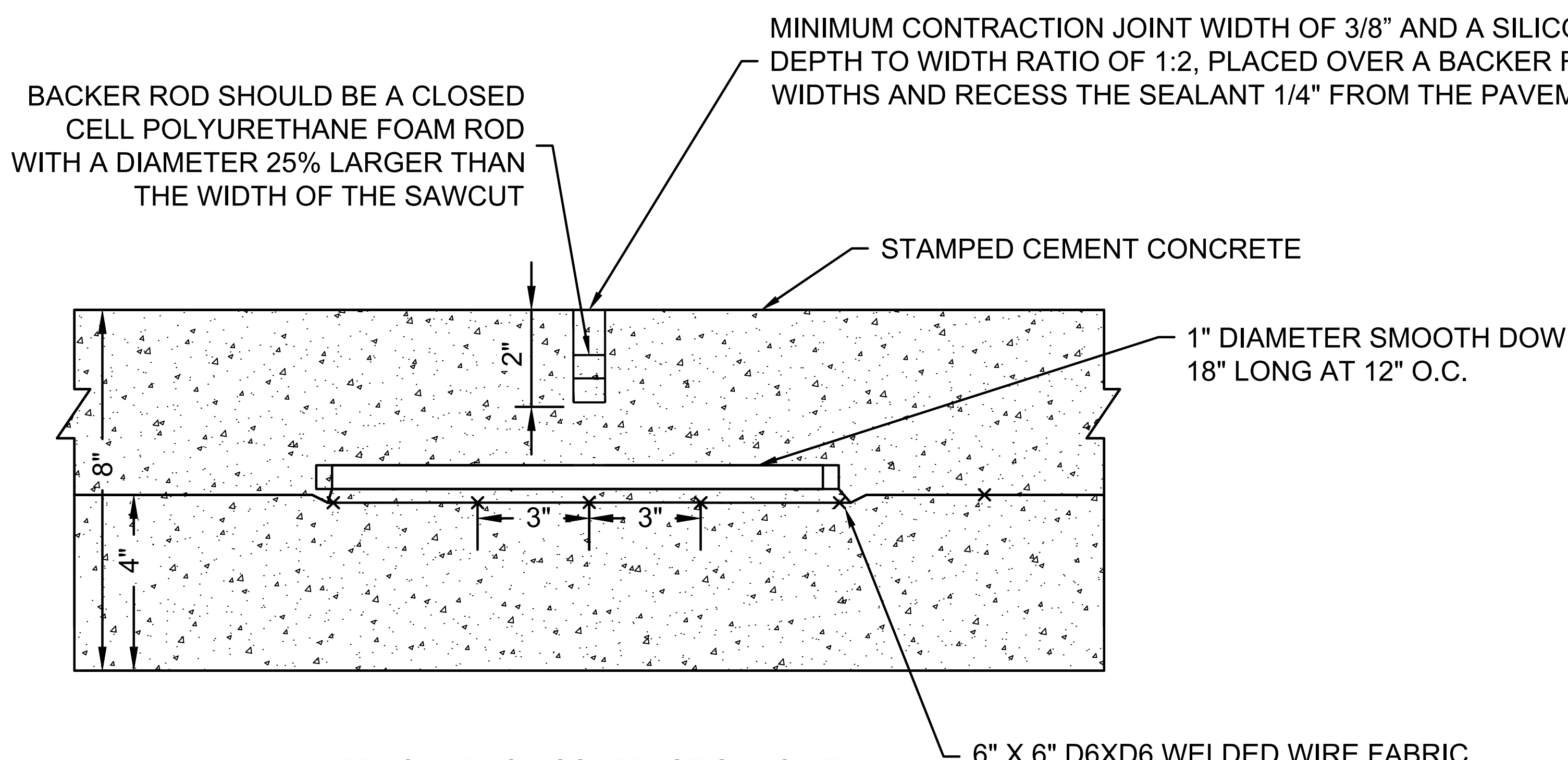
TYPE T-100 TRAVERSABLE GRANITE CURBING
STRAIGHT & RADIUS
NOT TO SCALE



TRUCK APRON STA 104+00 RT
NOT TO SCALE

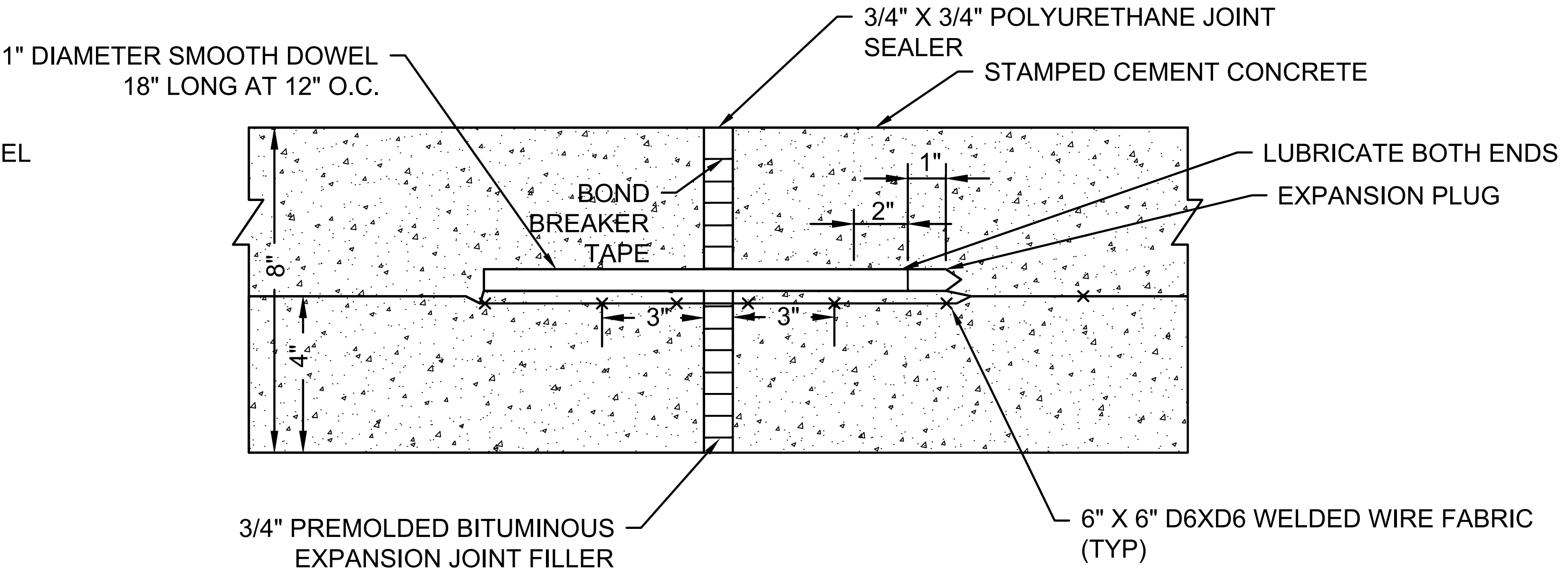


TRUCK APRON STA 104+00 LT
NOT TO SCALE



MINIMUM CONTRACTION JOINT WIDTH OF 3/8" AND A SILICONE SEALANT WITH A DEPTH TO WIDTH RATIO OF 1:2, PLACED OVER A BACKER ROD. USE 1/2" JOINT WIDTHS AND RECESS THE SEALANT 1/4" FROM THE PAVEMENT SURFACE
BACKER ROD SHOULD BE A CLOSED CELL POLYURETHANE FOAM ROD WITH A DIAMETER 25% LARGER THAN THE WIDTH OF THE SAWCUT
STAMPED CEMENT CONCRETE
2"
1" DIAMETER SMOOTH DOWEL 18" LONG AT 12" O.C.
8"
4"
3"
3"
6" X 6" D6XD6 WELDED WIRE FABRIC (TYP)

TRUCK APRON CONTRACTION JOINT
NOT TO SCALE



3/4" X 3/4" POLYURETHANE JOINT SEALER
1" DIAMETER SMOOTH DOWEL 18" LONG AT 12" O.C.
STAMPED CEMENT CONCRETE
BOND BREAKER TAPE
1"
2"
LUBRICATE BOTH ENDS
EXPANSION PLUG
8"
4"
3"
3"
3/4" PREMOLDED BITUMINOUS EXPANSION JOINT FILLER
6" X 6" D6XD6 WELDED WIRE FABRIC (TYP)

TRUCK APRON EXPANSION JOINT
NOT TO SCALE

TRUCK APRON NOTES:

1. THE SAWCUT DEPTH SHOULD BE 2" PER THE FHWA TECHNICAL ADVISORY.
2. JOINT SEALER IS REQUIRED OVER PREFORMED JOINT FILLER BETWEEN THE TRUCK APRON AND THE T-100 CURB FOR CONSISTENCY / UNIFORM APPEARANCE.

DOWEL NOTES:

1. DOWELS SHALL BE PLAIN STEEL BARS CONFORMING TO ASTM A 615, GRADE 50.
2. DOWELS IN EXPANSION JOINTS SHALL BE WIPED CLEAN AND COATED WITH A THIN FILM OF LUBRICATION OIL OR GREASE BEFORE CONCRETE IS PLACED.

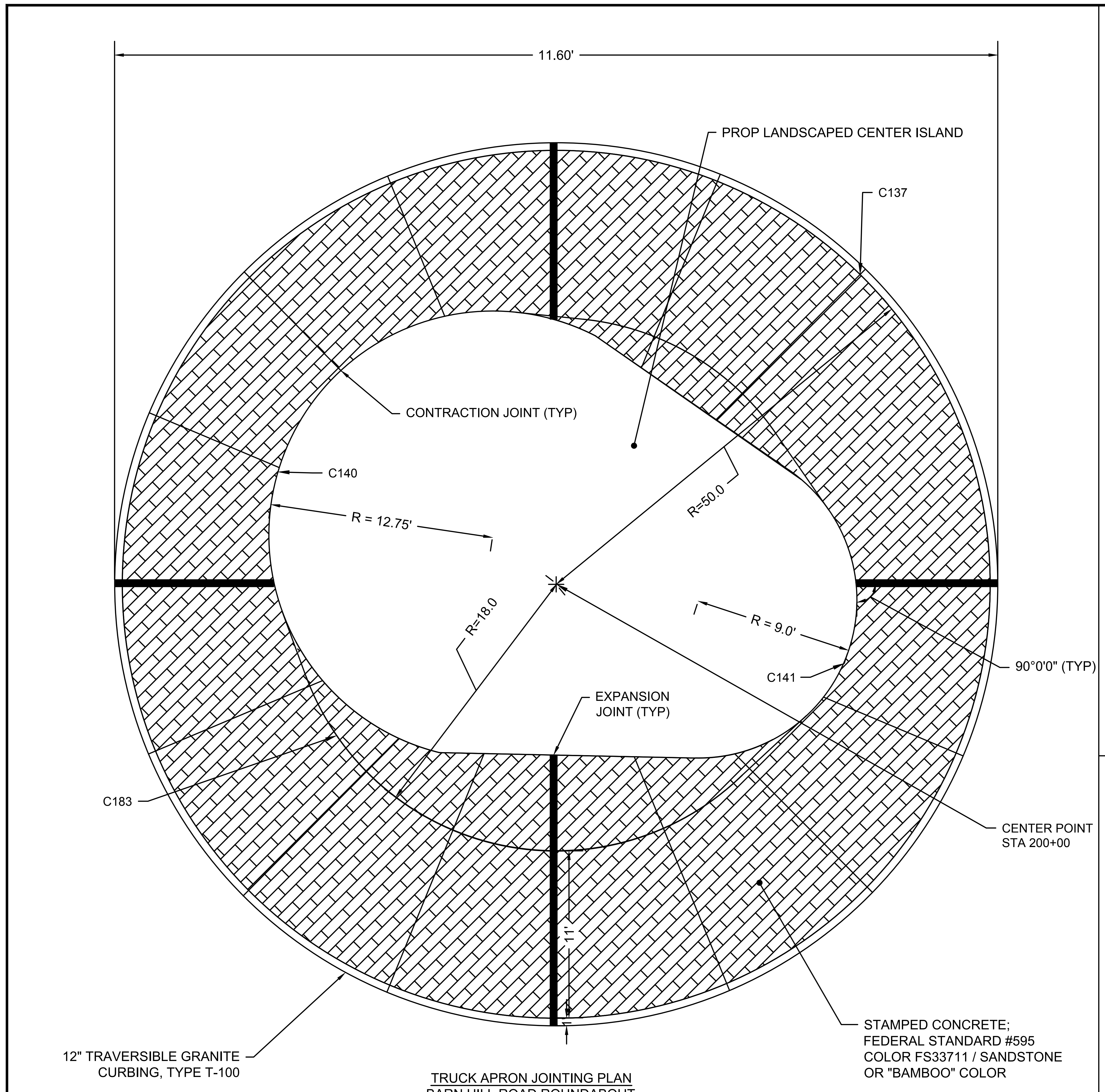
JOINT NOTES:

1. EXPANSION JOINTS SHALL COINCIDE WITH THE COBBLESTONE PATTERN.
2. NO ADDITIONAL CONSTRUCTION JOINTS SHALL BE PERMITTED. ALL CONSTRUCTION JOINTS SHALL BE LOCATED AT EXPANSION JOINTS.
3. POLYURETHANE JOINT SEALER SHALL CLOSELY MATCH THE CONCRETE COLOR.
4. TWELVE (12) CONSTRUCTION JOINTS AND FOUR (4) EXPANSION JOINTS SHALL BE SPACED EVENLY AROUND THE APRON.
5. PREFORMED JOINT FILLER TO BE INSTALLED AROUND CASTINGS WITHIN TRUCK APRON. ENSURE THAT A JOINT PASSES THROUGH THE CENTER OF THE CASTING.

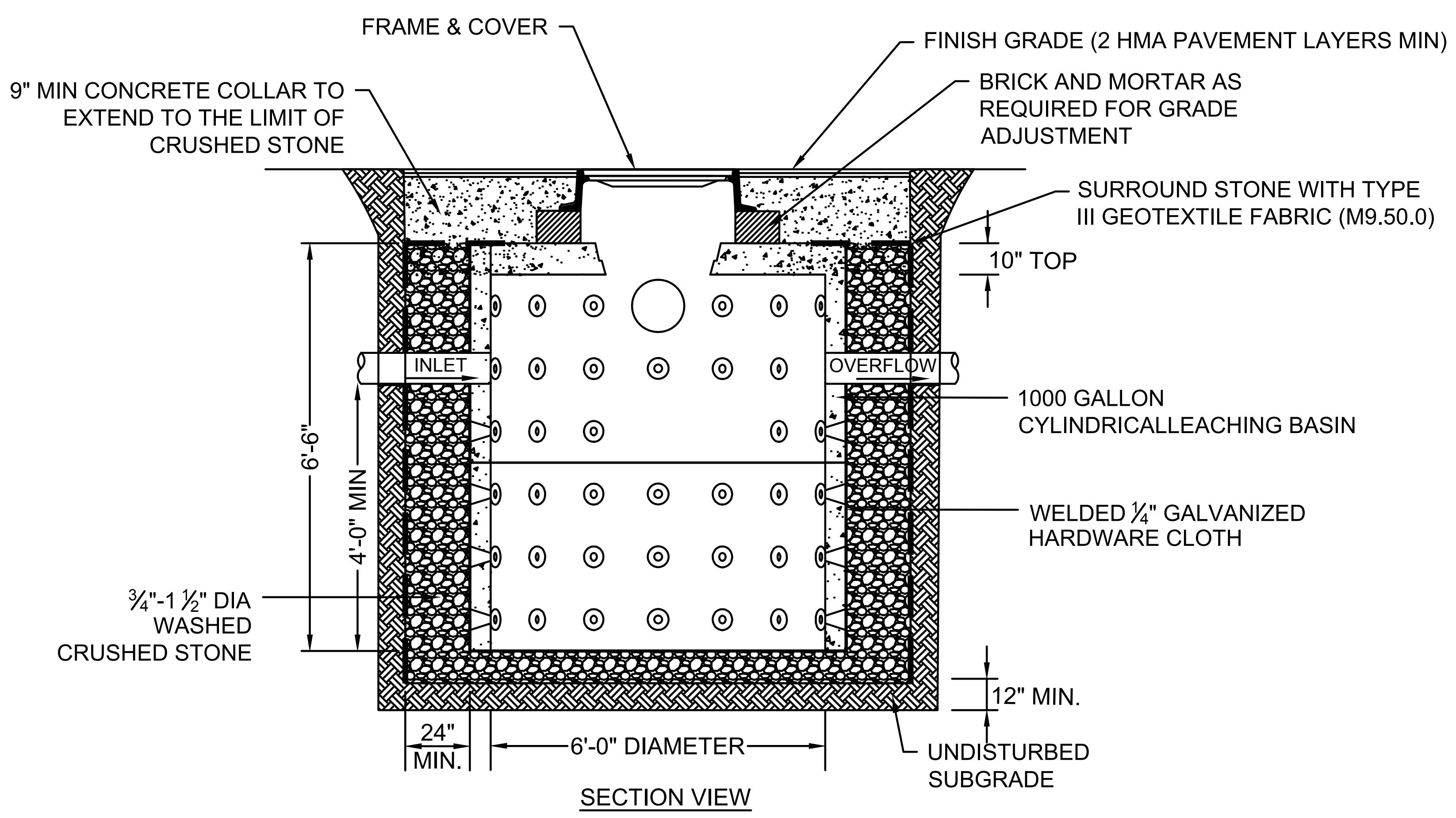
CHATHAM
MAIN STREET (ROUTE 28) FROM GEORGE RYDER ROAD TO BARN HILL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	75	109
PROJECT FILE NO.	606596		

CONSTRUCTION DETAILS


11.60'
PROP LANDSCAPED CENTER ISLAND
C137
CONTRACTION JOINT (TYP)
C140
R = 12.75'
R=50.0
R=18.0
R = 9.0'
C141
90°0'0" (TYP)
EXPANSION JOINT (TYP)
C183
CENTER POINT STA 200+00
11'
12" TRAVERSIBLE GRANITE CURBING, TYPE T-100
STAMPED CONCRETE; FEDERAL STANDARD #595 COLOR FS33711 / SANDSTONE OR "BAMBOO" COLOR

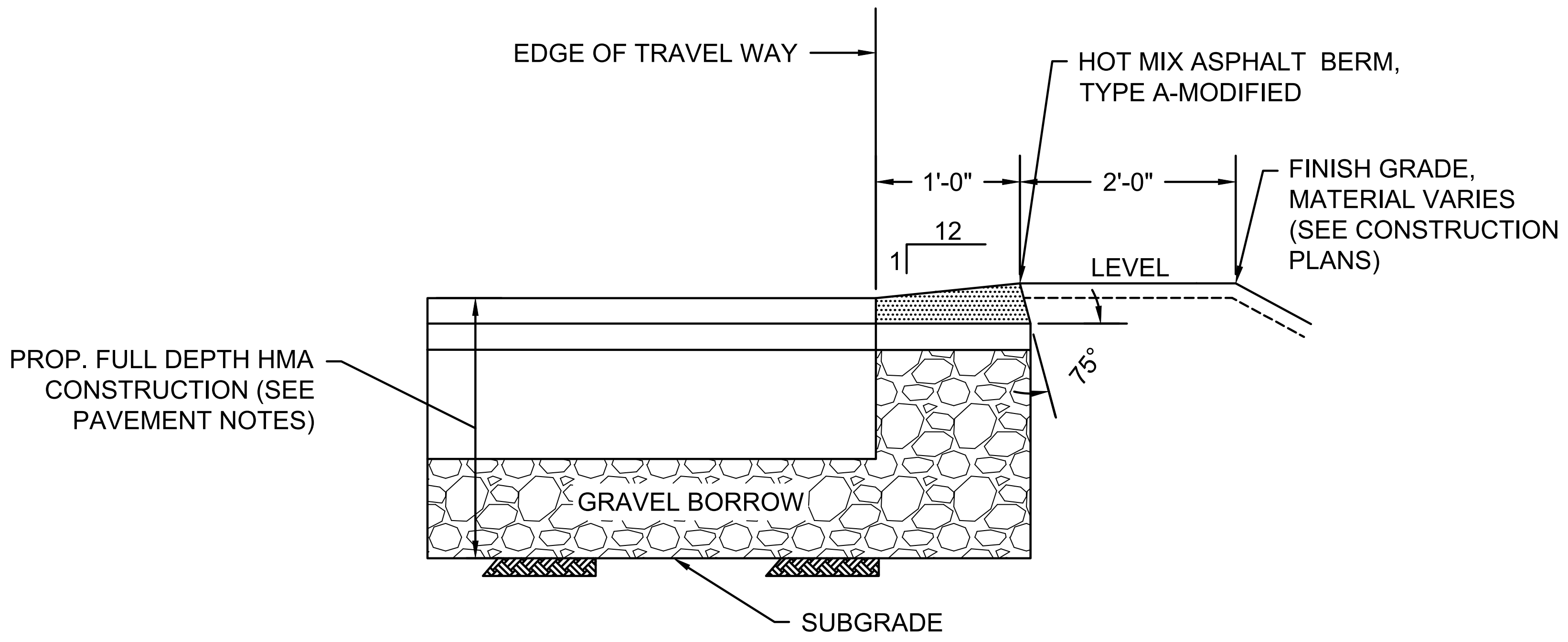
TRUCK APRON JOINTING PLAN
BARN HILL ROAD ROUNDABOUT
SCALE: 1" = 5'


FRAME & COVER
FINISH GRADE (2 HMA PAVEMENT LAYERS MIN)
9" MIN CONCRETE COLLAR TO EXTEND TO THE LIMIT OF CRUSHED STONE
BRICK AND MORTAR AS REQUIRED FOR GRADE ADJUSTMENT
SURROUND STONE WITH TYPE III GEOTEXTILE FABRIC (M9.50.0)
10" TOP
INLET
OVERFLOW
1000 GALLON CYLINDRICALLEACHING BASIN
6'-6"
4'-0" MIN
WELDED ¼" GALVANIZED HARDWARE CLOTH
¾"-1 ½" DIA WASHED CRUSHED STONE
12" MIN.
24" MIN.
6'-0" DIAMETER
UNDISTURBED SUBGRADE
SECTION VIEW

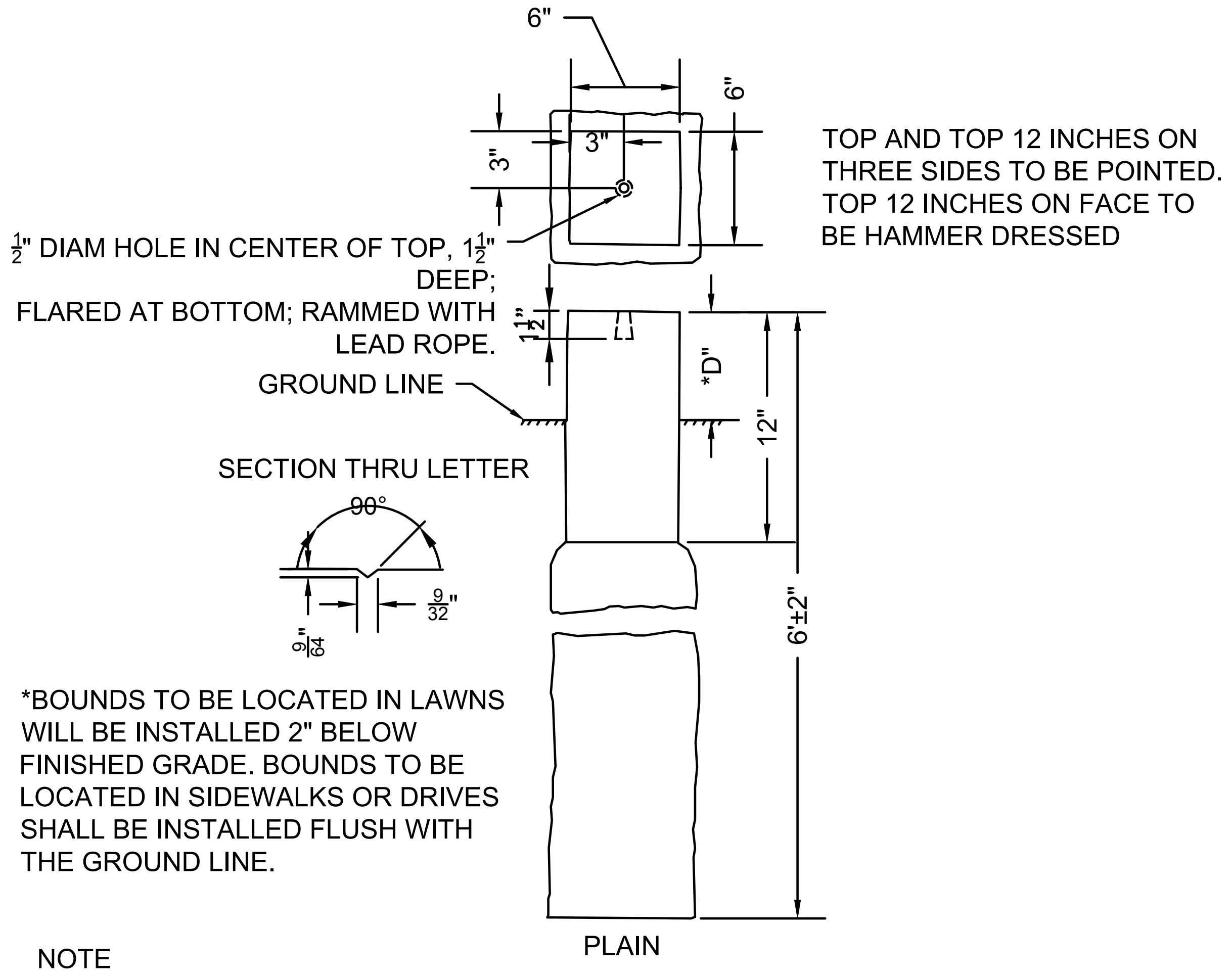
NOTES:

1. RATED FOR H-20 LOADING.
2. CONCRETE: 4,000 PSI MINIMUM AFTER 28 DAYS.
3. SEE PLANS FOR PIPE SIZES.

LEACHING BASIN
NOT TO SCALE


EDGE OF TRAVEL WAY
HOT MIX ASPHALT BERM, TYPE A-MODIFIED
1'-0"
2'-0"
FINISH GRADE, MATERIAL VARIES (SEE CONSTRUCTION PLANS)
1
12
LEVEL
75°
PROP. FULL DEPTH HMA CONSTRUCTION (SEE PAVEMENT NOTES)
GRAVEL BORROW
SUBGRADE

HOT MIX ASPHALT BERM. TYPE A-MODIFIED
NOT TO SCALE


6"
6"
3"
3"
½" DIAM HOLE IN CENTER OF TOP, 1½" DEEP; FLARED AT BOTTOM; RAMMED WITH LEAD ROPE.
1½"
GROUND LINE
"D"
12"
6'±2"
SECTION THRU LETTER
90°
9/32"
9/64"
PLAIN

TOP AND TOP 12 INCHES ON THREE SIDES TO BE POINTED. TOP 12 INCHES ON FACE TO BE HAMMER DRESSED

*BOUNDS TO BE LOCATED IN LAWNS WILL BE INSTALLED 2" BELOW FINISHED GRADE. BOUNDS TO BE LOCATED IN SIDEWALKS OR DRIVES SHALL BE INSTALLED FLUSH WITH THE GROUND LINE.

NOTE
FOR DESCRIPTIONS, MATERIALS AND CONSTRUCTION METHODS, SEE SPECIFICATIONS.

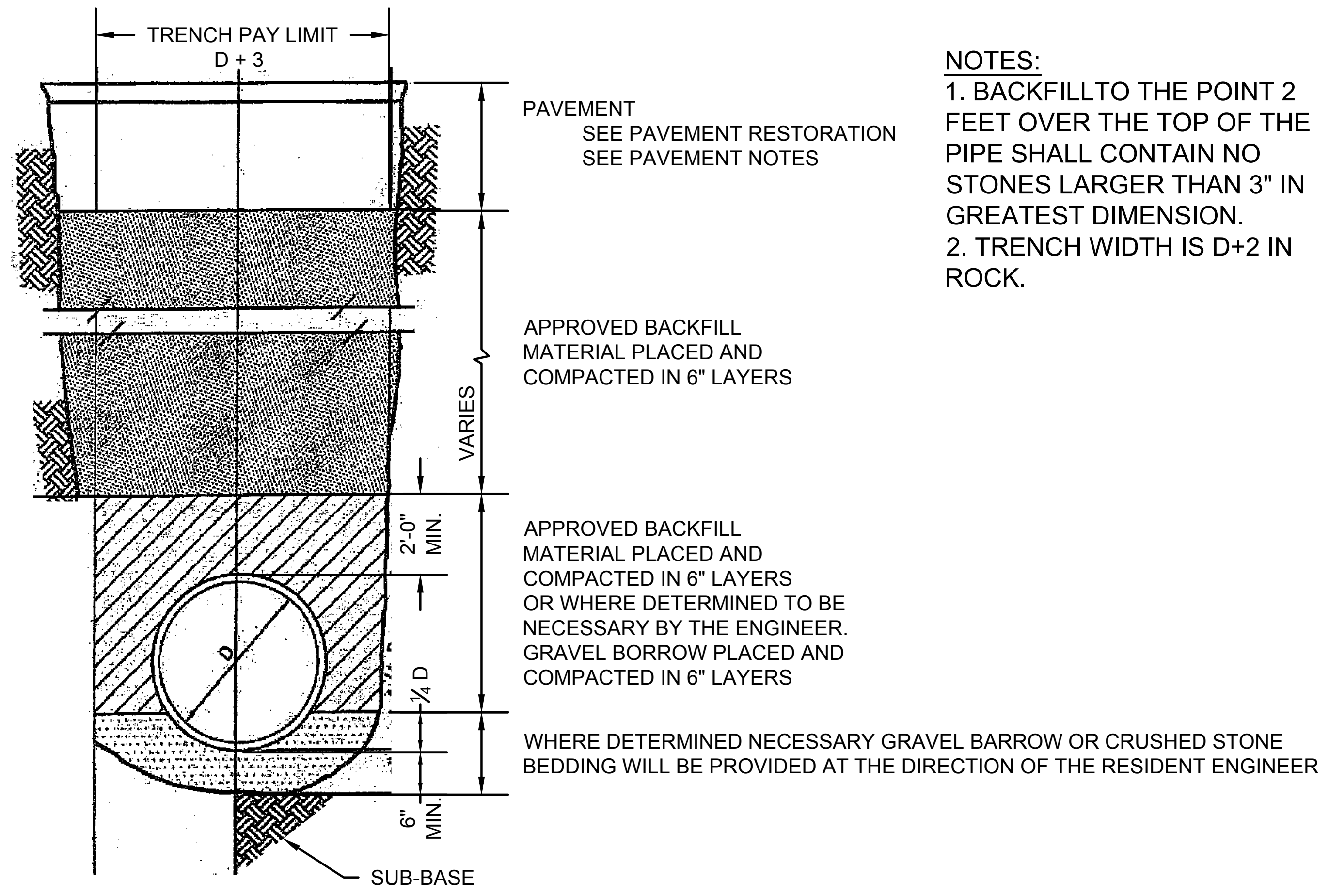
GRANITE BOUNDS
NOT TO SCALE

606596_HD(CONST DET).DWG   Plotted on 30-Mar-2018 2:17 PM

CHATHAM
MAIN STREET (ROUTE 28) FROM GEORGE RYDER ROAD TO BARN HILL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	76	109
PROJECT FILE NO.	606596		

CONSTRUCTION DETAILS

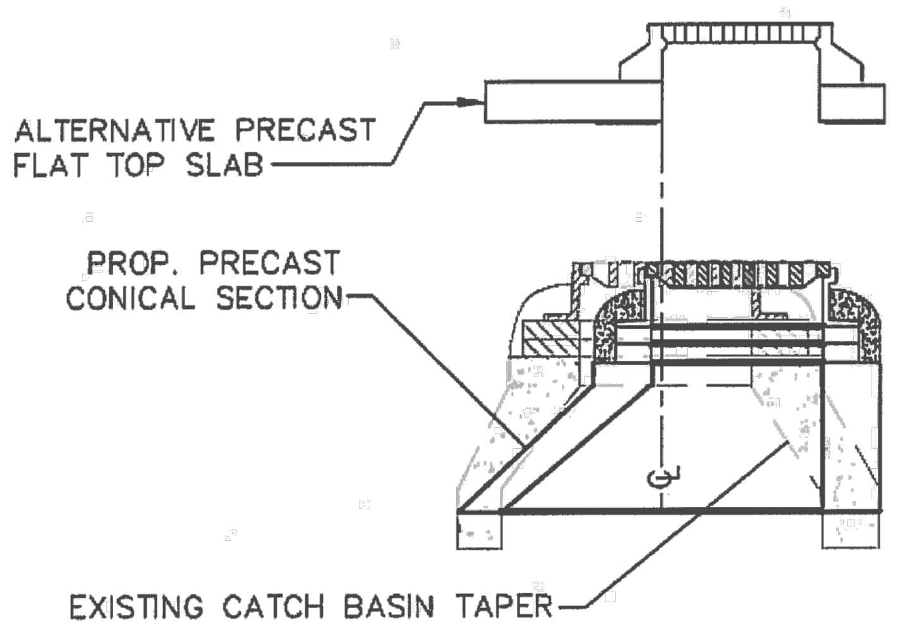


TRENCH PAY LIMIT
D + 3
PAVEMENT
SEE PAVEMENT RESTORATION
SEE PAVEMENT NOTES
APPROVED BACKFILL MATERIAL PLACED AND COMPACTED IN 6" LAYERS
VARIES
2'-0" MIN.
APPROVED BACKFILL MATERIAL PLACED AND COMPACTED IN 6" LAYERS OR WHERE DETERMINED TO BE NECESSARY BY THE ENGINEER. GRAVEL BORROW PLACED AND COMPACTED IN 6" LAYERS
D
¼ D
WHERE DETERMINED NECESSARY GRAVEL BARROW OR CRUSHED STONE BEDDING WILL BE PROVIDED AT THE DIRECTION OF THE RESIDENT ENGINEER
6" MIN.
SUB-BASE

NOTES:

1. BACKFILLTO THE POINT 2 FEET OVER THE TOP OF THE PIPE SHALL CONTAIN NO STONES LARGER THAN 3" IN GREATEST DIMENSION.
2. TRENCH WIDTH IS D+2 IN ROCK.

UTILITY TRENCH DETAIL
NOT TO SCALE

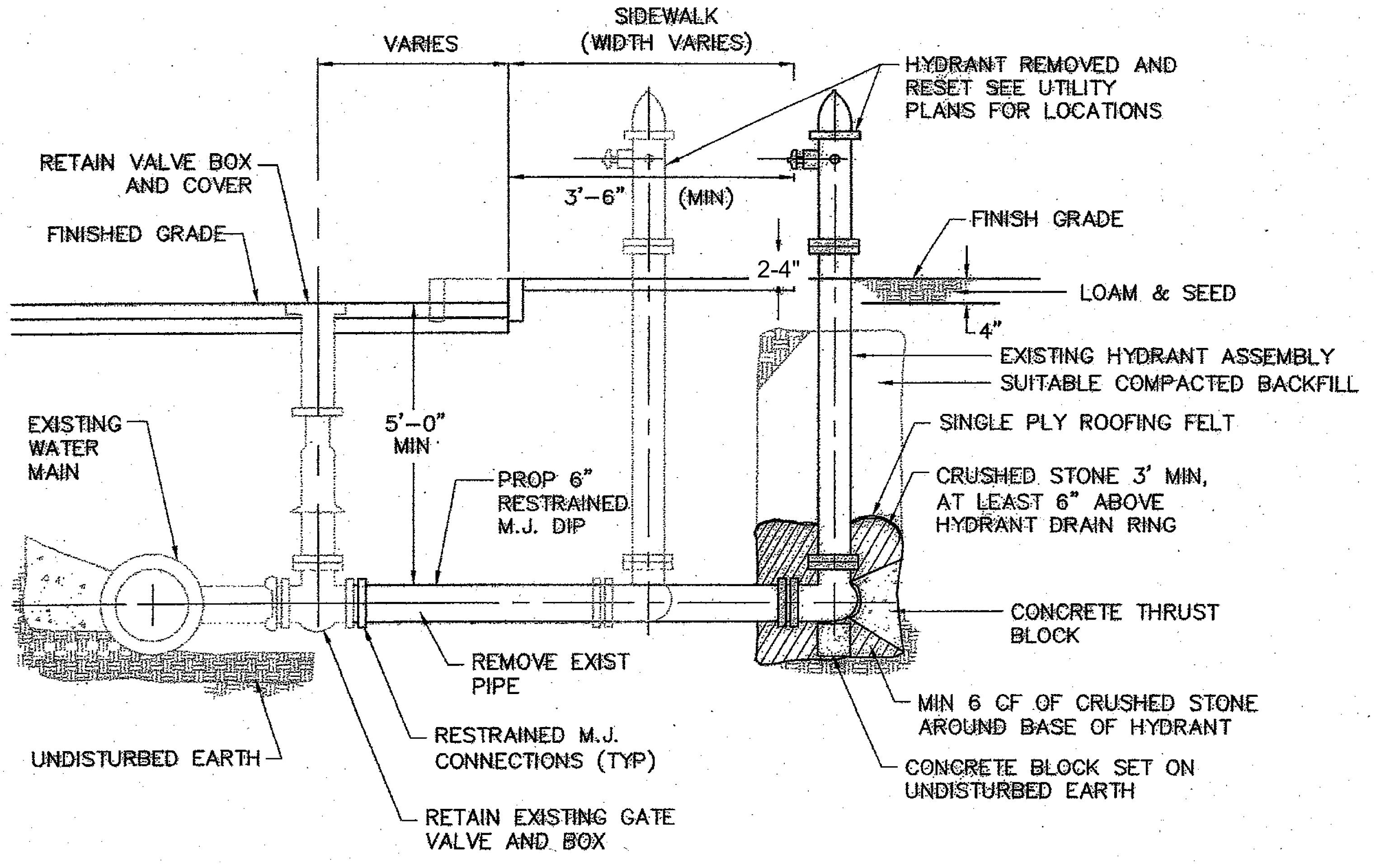


ALTERNATIVE PRECAST FLAT TOP SLAB
PROP. PRECAST CONICAL SECTION
EXISTING CATCH BASIN TAPER

CB TREATMENT NOTES:

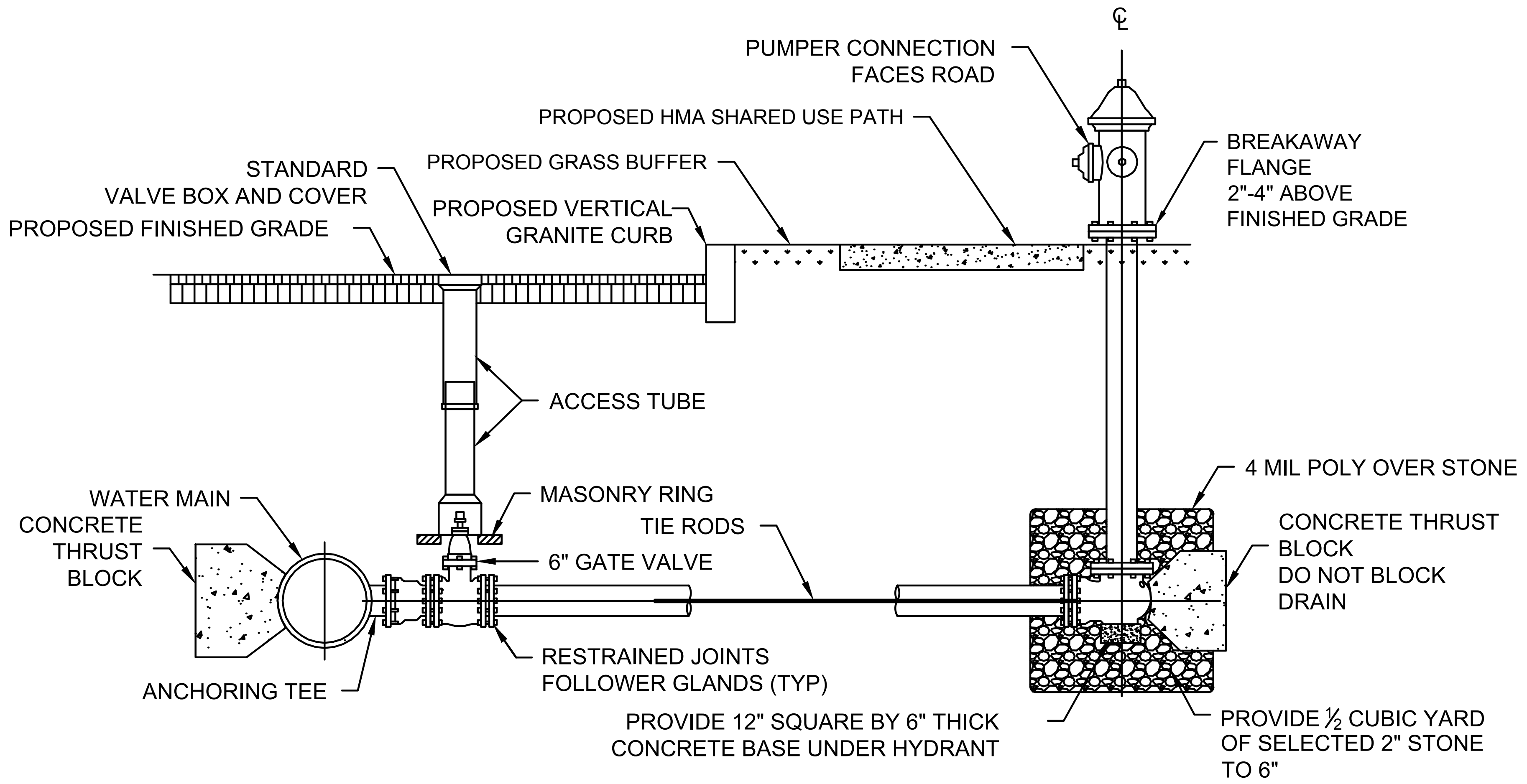
1. BASED ON ACTUAL FIELD CONDITIONS; THE CONTRACTOR SHALL DETERMINE WHICH STYLE OF TOP SECTION SHOULD BE USED.
2. CATCH BASIN FRAME AND GRATE SHALL BE SET IN FULL MORTAR BED. ADJUST TO GRADE WITH CLAY BRICK AND MORTAR (2 BRICK COURSES TYPICALLY, 5 BRICK COURSES MAXIMUM)

REMODELED CATCH BASIN (CB) TREATMENT
NOT TO SCALE



VARIES
SIDEWALK (WIDTH VARIES)
HYDRANT REMOVED AND RESET SEE UTILITY PLANS FOR LOCATIONS
RETAIN VALVE BOX AND COVER
FINISHED GRADE
3'-6" (MIN)
FINISH GRADE
2-4"
LOAM & SEED
4"
EXISTING HYDRANT ASSEMBLY
SUITABLE COMPACTED BACKFILL
EXISTING WATER MAIN
5'-0" MIN
SINGLE PLY ROOFING FELT
PROP 6" RESTRAINED M.J. DIP
CRUSHED STONE 3' MIN, AT LEAST 6" ABOVE HYDRANT DRAIN RING
CONCRETE THRUST BLOCK
REMOVE EXIST PIPE
UNDISTURBED EARTH
RESTRAINED M.J. CONNECTIONS (TYP)
MIN 6 CF OF CRUSHED STONE AROUND BASE OF HYDRANT
CONCRETE BLOCK SET ON UNDISTURBED EARTH
RETAIN EXISTING GATE VALVE AND BOX

DETAIL FOR HYDRANT REMOVED AND RESET
NOT TO SCALE

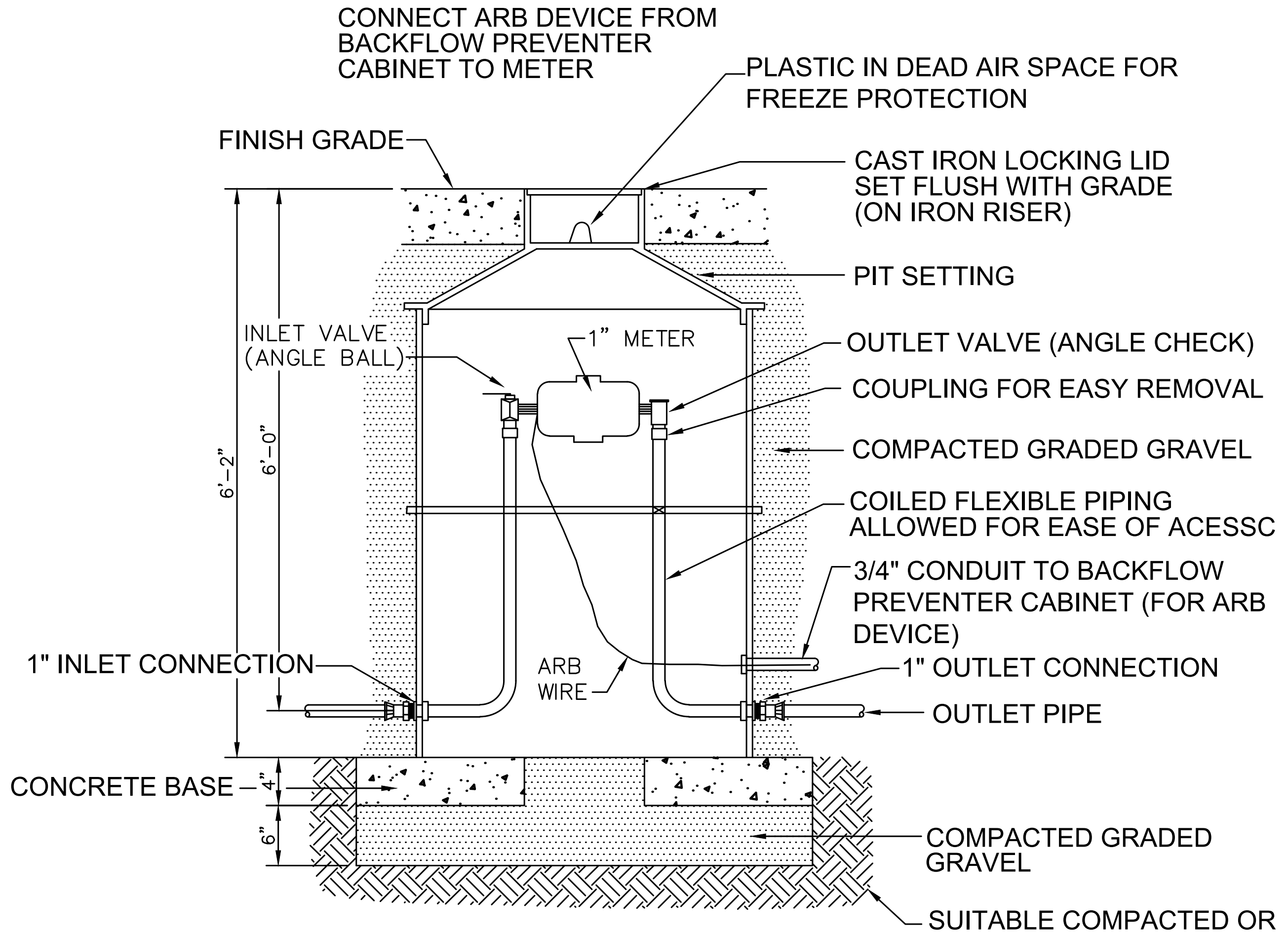


℄
PUMPER CONNECTION FACES ROAD
PROPOSED HMA SHARED USE PATH
BREAKAWAY FLANGE 2"-4" ABOVE FINISHED GRADE
STANDARD VALVE BOX AND COVER
PROPOSED GRASS BUFFER
PROPOSED VERTICAL GRANITE CURB
PROPOSED FINISHED GRADE
ACCESS TUBE
4 MIL POLY OVER STONE
WATER MAIN
MASONRY RING
CONCRETE THRUST BLOCK
TIE RODS
CONCRETE THRUST BLOCK DO NOT BLOCK DRAIN
6" GATE VALVE
RESTRAINED JOINTS FOLLOWER GLANDS (TYP)
ANCHORING TEE
PROVIDE 12" SQUARE BY 6" THICK CONCRETE BASE UNDER HYDRANT
PROVIDE ½ CUBIC YARD OF SELECTED 2" STONE TO 6" ABOVE HYDRANT DRAIN

NOTES:

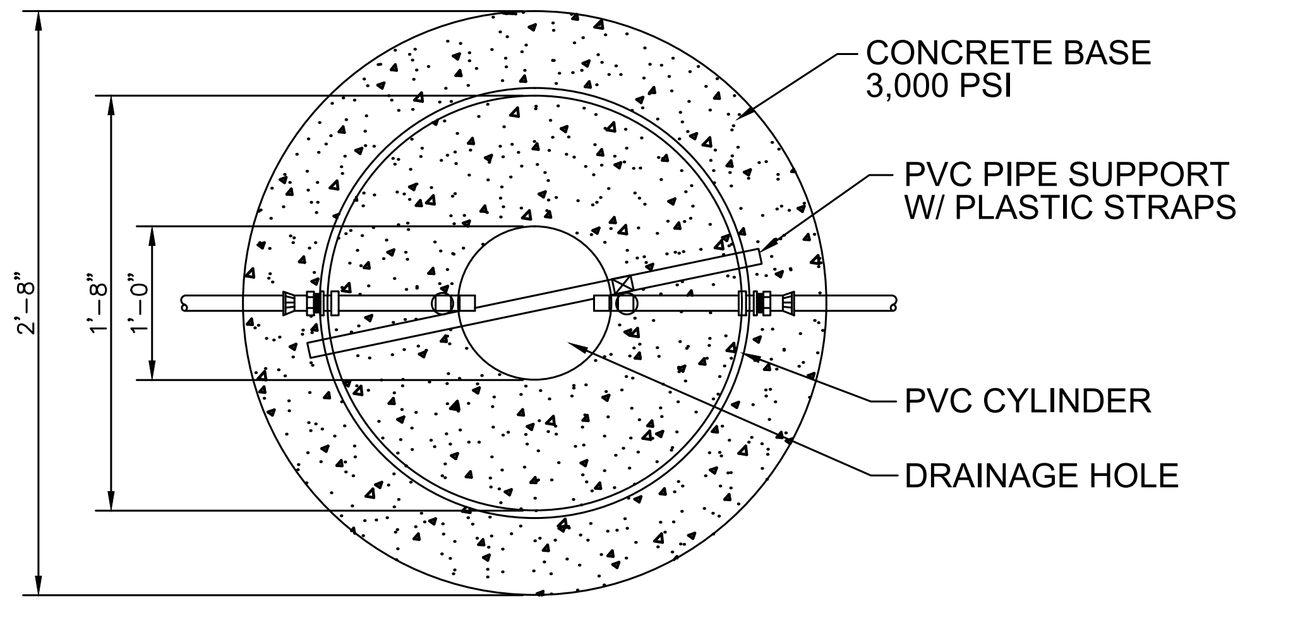
1. CONCRETE THRUST BLOCK TO BE USED ONLY WHERE IT WILL BEAR ON UNDISTURBED EARTH.
2. USE RESTRAINED JOINT FOLLOWER GLANDS OR TIE RODS WHERE CONCRETE THRUST BLOCK IS UNACCEPTABLE.
3. SIZE OF BLOCK OR FITTING TO BE DESIGNED FOR SPECIFIC CONDITIONS, OR ANY NECESSARY BENDS.

HYDRANT WITH PIPE AND GATE VALVE
NOT TO SCALE



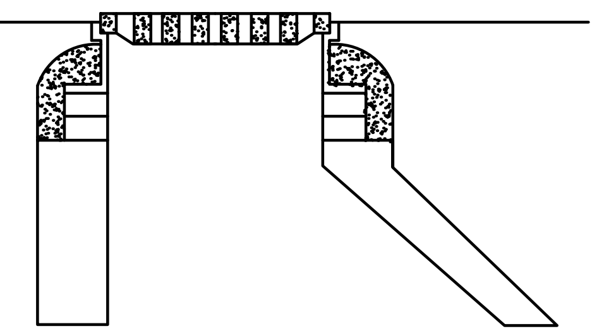
CONNECT ARB DEVICE FROM BACKFLOW PREVENTER CABINET TO METER
PLASTIC IN DEAD AIR SPACE FOR FREEZE PROTECTION
FINISH GRADE
CAST IRON LOCKING LID SET FLUSH WITH GRADE (ON IRON RISER)
PIT SETTING
INLET VALVE (ANGLE BALL)
1" METER
OUTLET VALVE (ANGLE CHECK)
COUPLING FOR EASY REMOVAL
COMPACTED GRADED GRAVEL
6'-2"
6'-0"
COILED FLEXIBLE PIPING ALLOWED FOR EASE OF ACESSC
3/4" CONDUIT TO BACKFLOW PREVENTER CABINET (FOR ARB DEVICE)
1" INLET CONNECTION
ARB WIRE
1" OUTLET CONNECTION
OUTLET PIPE
CONCRETE BASE
4"
6"
COMPACTED GRADED GRAVEL
SUITABLE COMPACTED OR UNDISTURBED SUBGRADE

SECTION

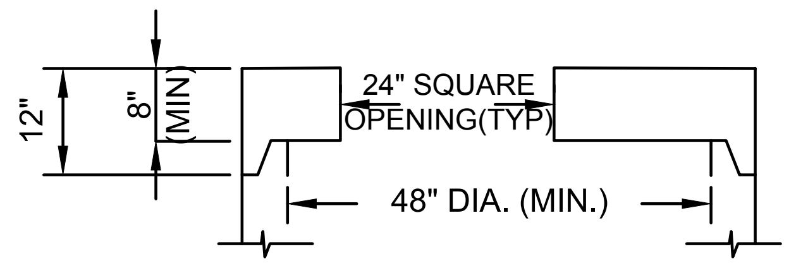


PLAN

WATER METER PIT
NOT TO SCALE



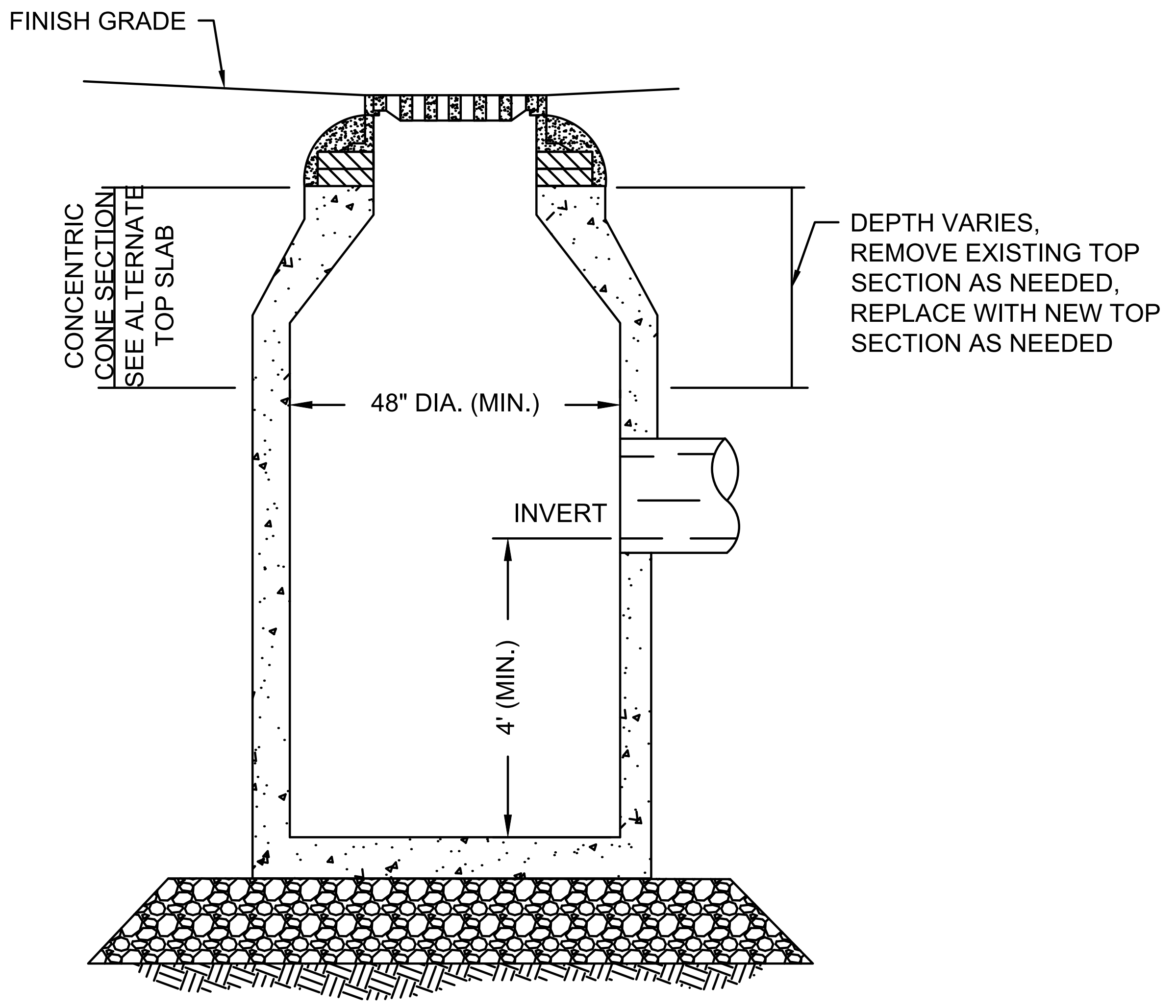
ALTERNATE ECCENTRIC CONE SECTION



ALTERNATE TOP SLAB

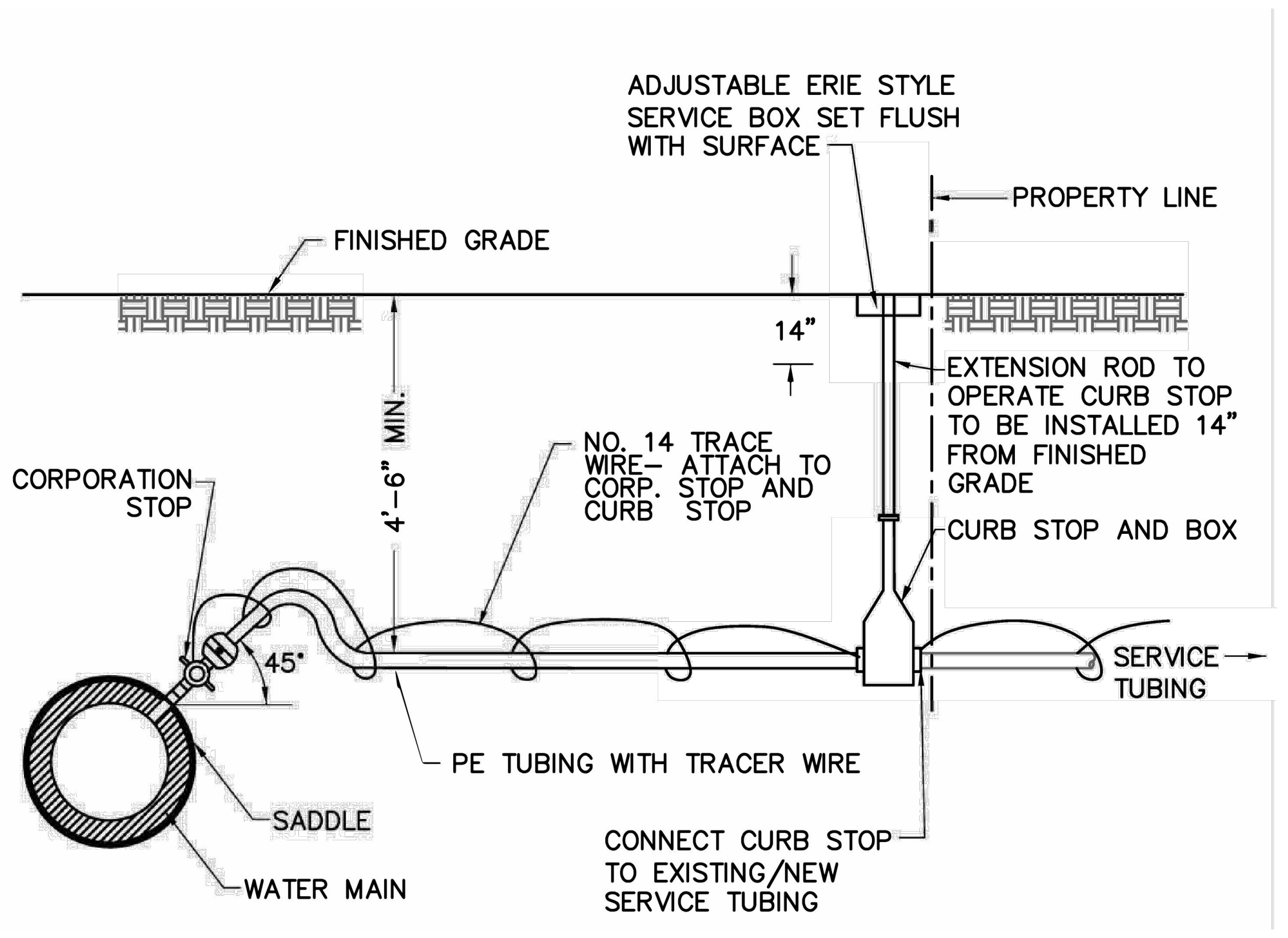
NOTES:

1. BASED ON ACTUAL FIELD CONDITIONS; THE CONTRACTOR SHALL DETERMINE WHICH STYLE OF TOP SECTION SHOULD BE USED.



FINISH GRADE
CONCENTRIC CONE SECTION SEE ALTERNATE TOP SLAB
DEPTH VARIES, REMOVE EXISTING TOP SECTION AS NEEDED, REPLACE WITH NEW TOP SECTION AS NEEDED
48" DIA. (MIN.)
INVERT
4' (MIN.)

DEEP SUMP CATCH BASIN
NOT TO SCALE



ADJUSTABLE ERIE STYLE SERVICE BOX SET FLUSH WITH SURFACE
PROPERTY LINE
FINISHED GRADE
14"
4'-6" MIN.
EXTENSION ROD TO OPERATE CURB STOP TO BE INSTALLED 14" FROM FINISHED GRADE
CORPORATION STOP
NO. 14 TRACE WIRE– ATTACH TO CORP. STOP AND CURB STOP
CURB STOP AND BOX
45°
SERVICE TUBING
PE TUBING WITH TRACER WIRE
SADDLE
WATER MAIN
CONNECT CURB STOP TO EXISTING/NEW SERVICE TUBING

NOTES:

1. ALL JOINTS SHALL BE COMPRESSION TYPE.
2. PE TUBING SHALL BE BACKFILLED WITH SAND BY HAND TO 6" ABOVE TUBING.
3. A SADDLE WILL BE REQUIRED UNLESS THE DIRECT TAP IS FOR A 1" COPORATION ON A DUCTILE-IRON WATER MAIN 12" IN DIAMETER OR LARGER.
4. WATER SERVICES SHALL BE INSULATED IN ALL AREAS WHERE THERE IS LESS THAN 4 FEET OF COVER.
5. CURB STOP SHALL BE INSTALLED AT THE PROPERTY LINE.
6. ALL WATER SERVICE BRASS SHALL BE NO LEAD, WITH "NL" CAST ON THE BODY.

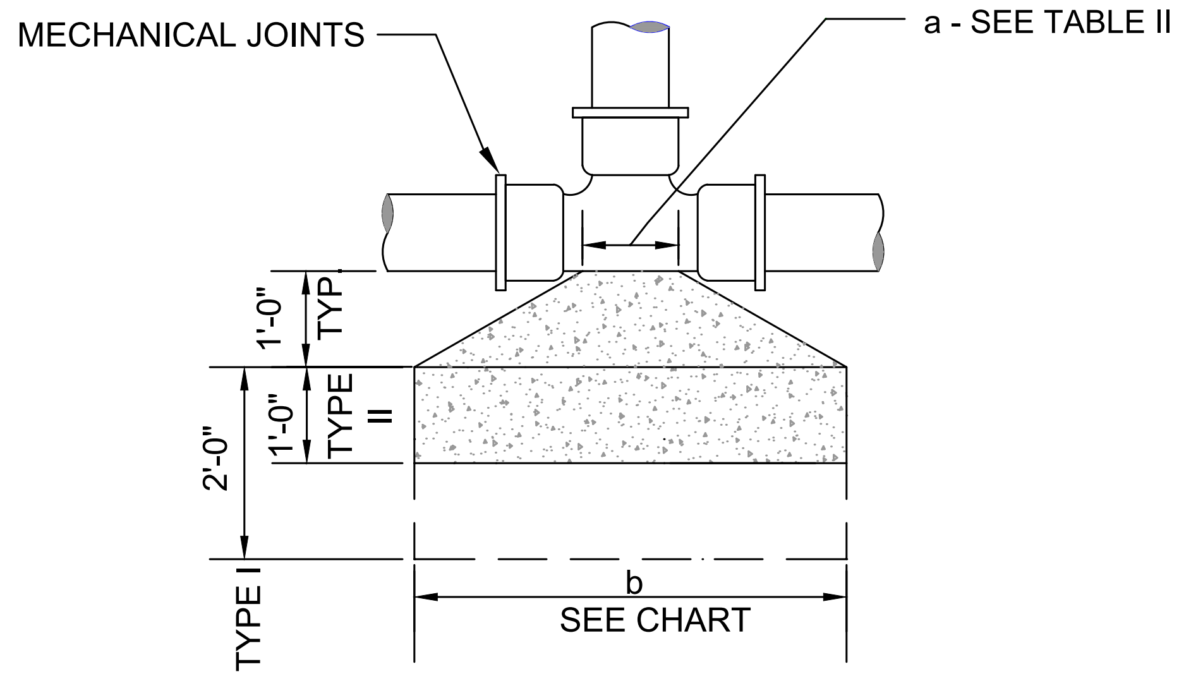
WATER SERVICE CONNECTION
NOT TO SCALE

606596_HD(CONST DET).DWG Plotted on 30-Mar-2018 2:17 PM

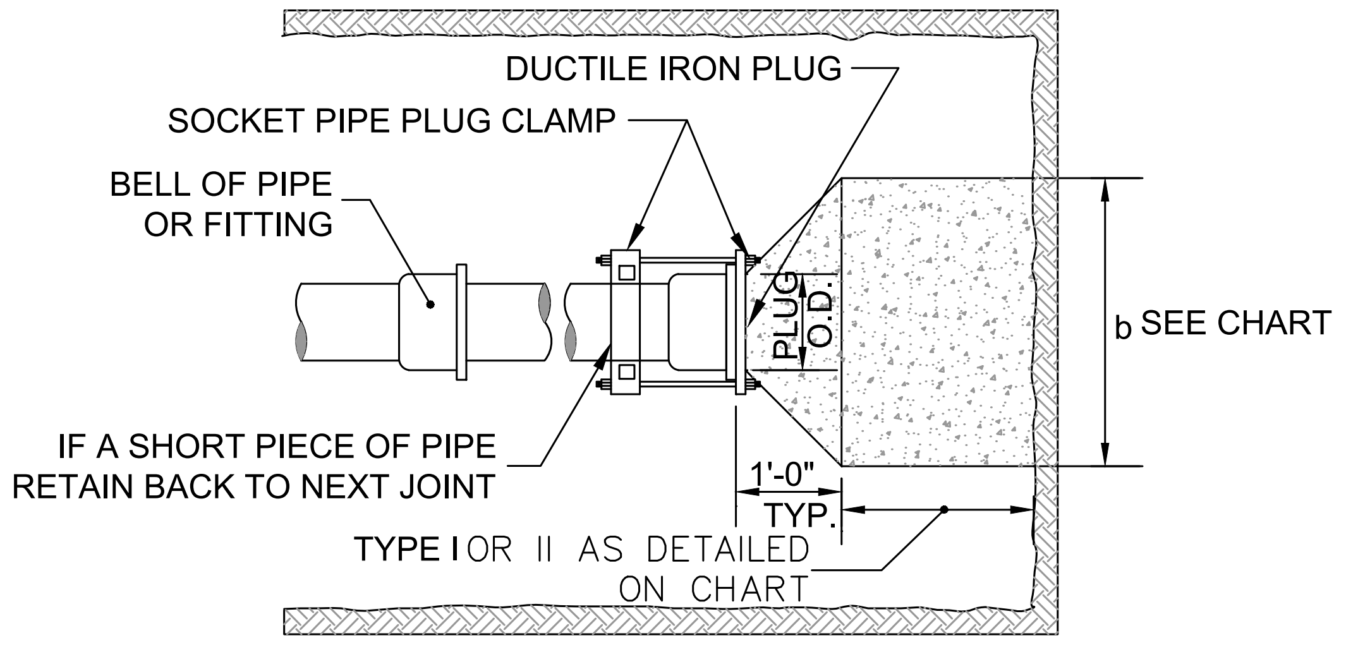
CHATHAM
MAIN STREET (ROUTE 28) FROM GEORGE RYDER ROAD TO BARN HILL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	77	109
PROJECT FILE NO.	606596		

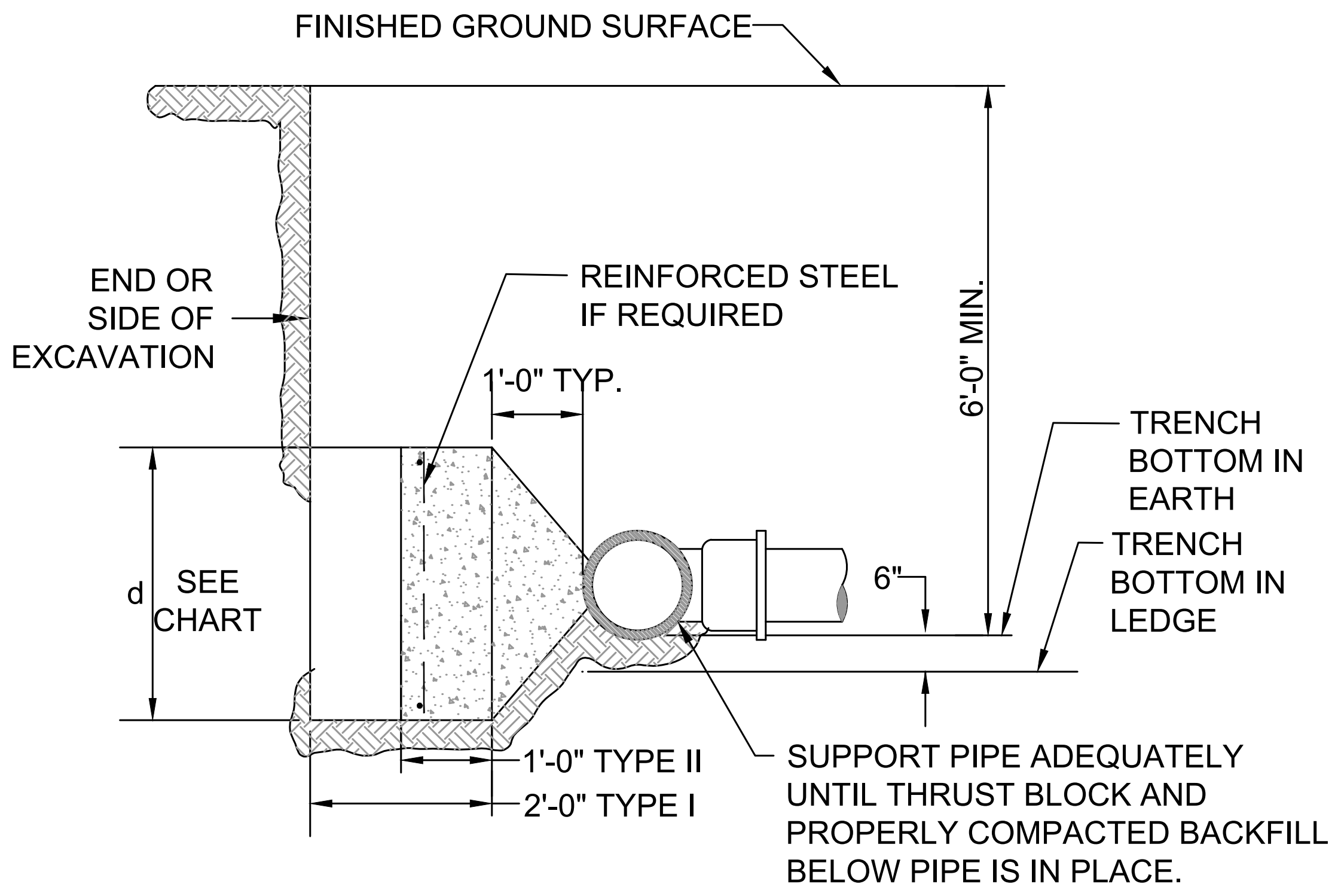
CONSTRUCTION DETAILS



PLAN - TEE

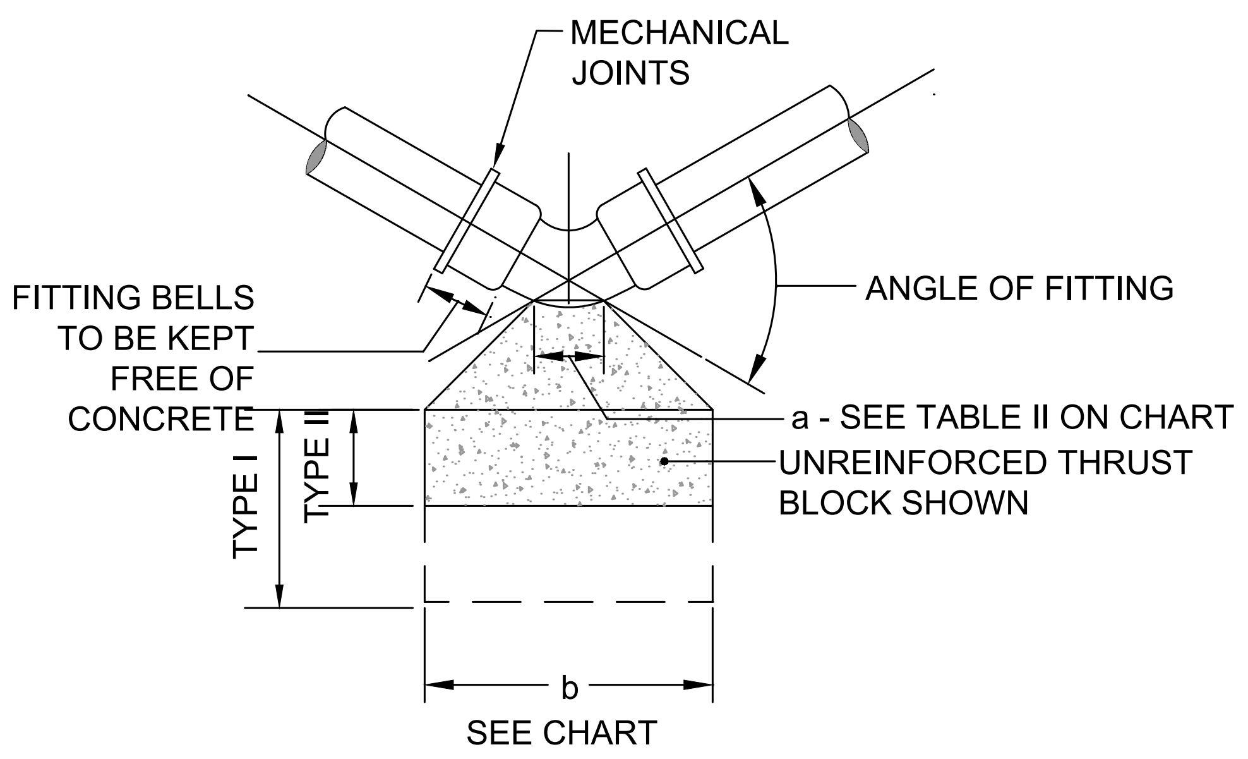


PLAN - DEAD END



FINISHED GROUND SURFACE
END OR SIDE OF EXCAVATION
REINFORCED STEEL IF REQUIRED
1'-0" TYP.
6'-0" MIN.
TRENCH BOTTOM IN EARTH
TRENCH BOTTOM IN LEDGE
d SEE CHART
6"
1'-0" TYPE II
2'-0" TYPE I
SUPPORT PIPE ADEQUATELY UNTIL THRUST BLOCK AND PROPERLY COMPACTED BACKFILL BELOW PIPE IS IN PLACE.

SECTION



MECHANICAL JOINTS
ANGLE OF FITTING
FITTING BELLS TO BE KEPT FREE OF CONCRETE
a - SEE TABLE II ON CHART
UNREINFORCED THRUST BLOCK SHOWN
TYPE I
TYPE II
b
SEE CHART

PLAN - BEND

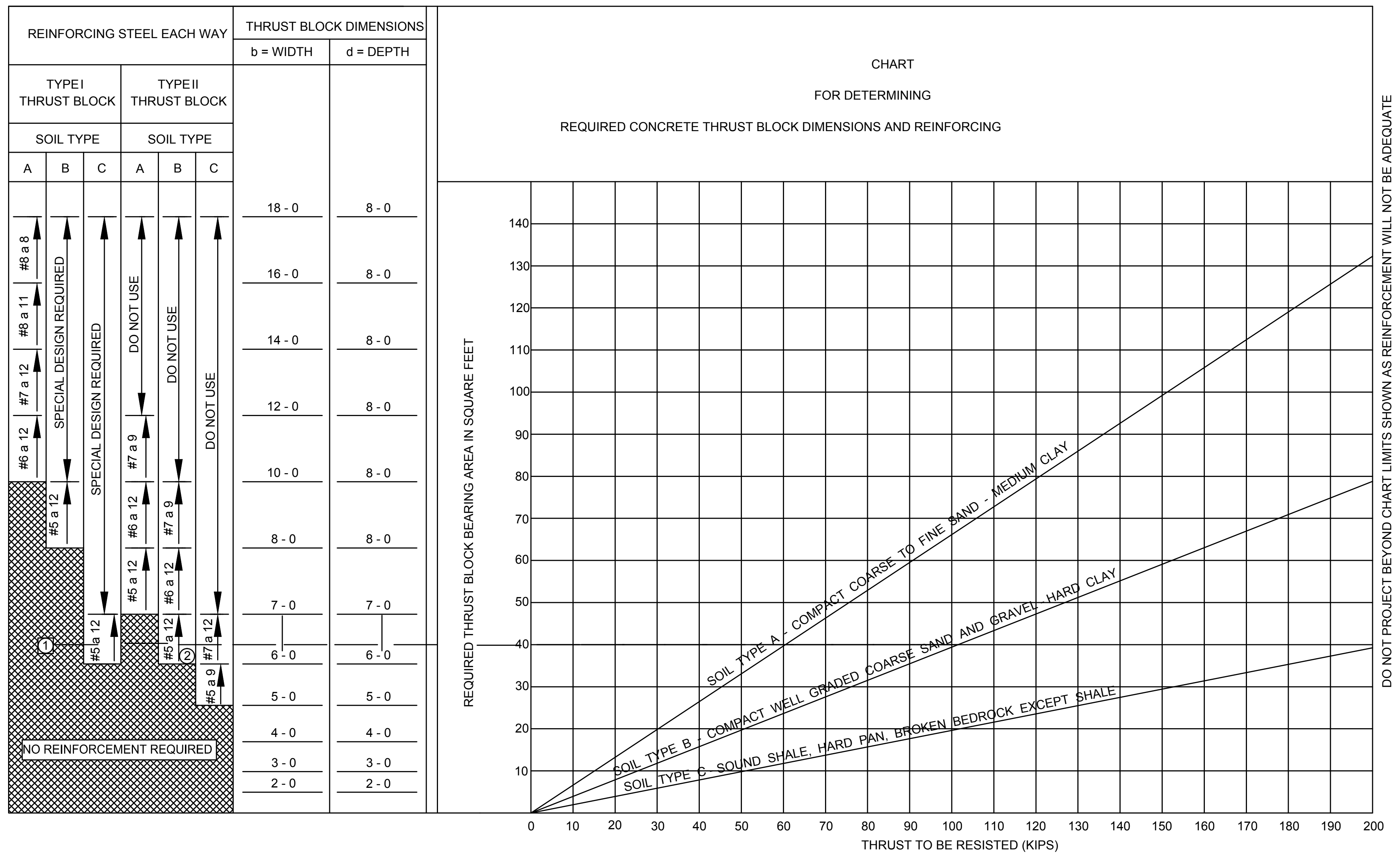


TABLE II - "a" DIMENSION - FEET

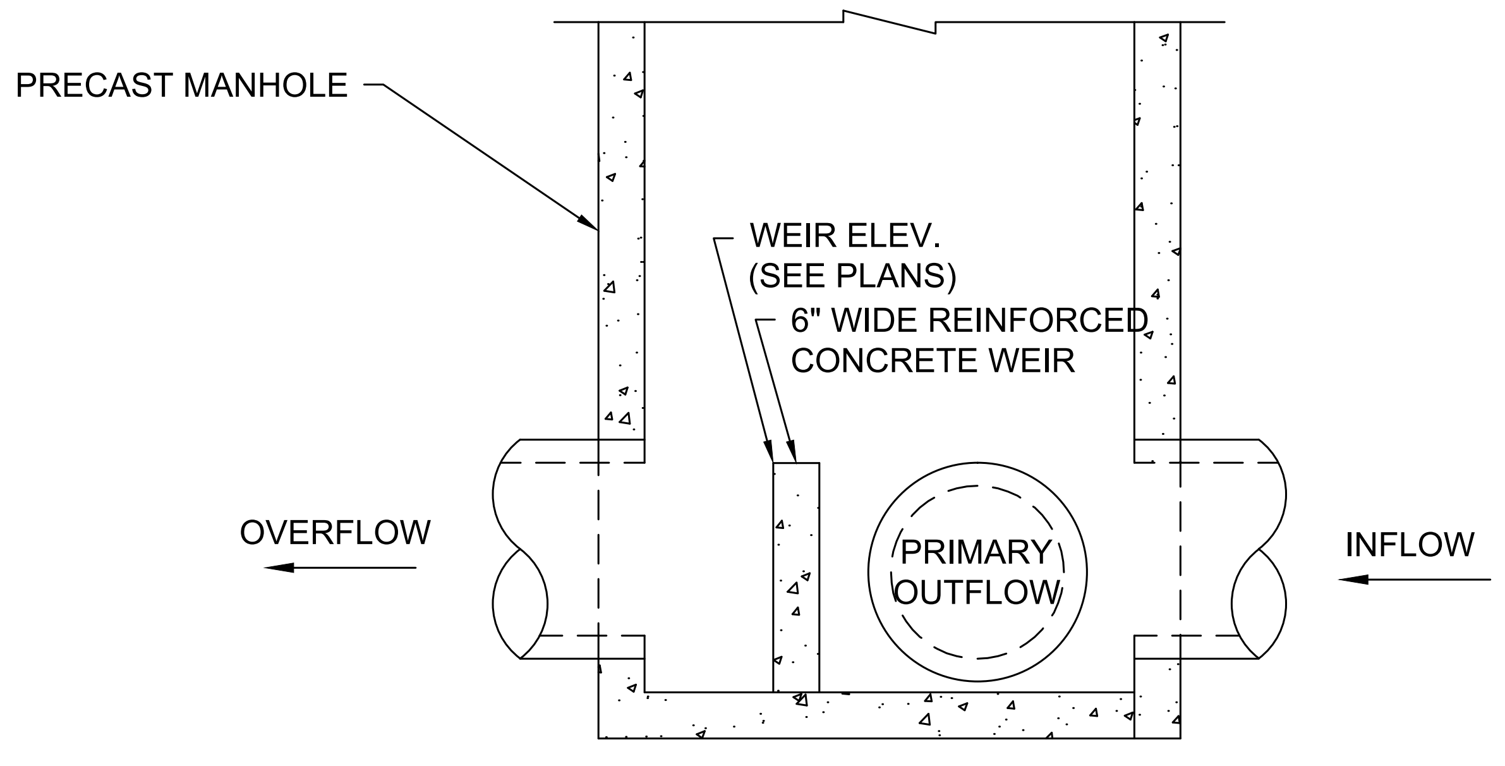
PIPE DIAMETER - INCHES	90° FITTING	OTHERS
6, 8, 10 & 12	1 - 6	1 - 0
16 & 20	2 - 0	1 - 6
24" - 30"	3 - 0	2 - 0

TABLE I - THRUST - KIPS (WATER PRESSURE = 200 P.S.I.)

	PIPE DIAMETER INCHES	6	8	10	12	16	20	24	30	36	42
DEAD ENDS AND TEES		5.6	10	15.8	22.6	40.2	62.8	90.4	141.0	203.6	277.0
ANGLE FITTINGS	90°	7.9	14.2	22.4	32.0	56.8	88.8	127.7	199.0	288.0	392.0
	67 1/2°	-	11.1	17.6	25.1	44.7	70.0	100.2	157.0	226.0	308.0
	56 1/4°	-	-	14.9	21.2	37.9	59.2	85.1	133.0	192.0	261.0
	45°	-	-	-	17.3	30.8	48.1	69.0	108.0	156.0	212.0
	33 3/4°	-	-	-	13.1	23.3	36.5	52.5	82.0	118.0	161.0
	22 1/2°	-	-	-	8.8	15.7	24.5	35.2	55.0	79.5	108.0

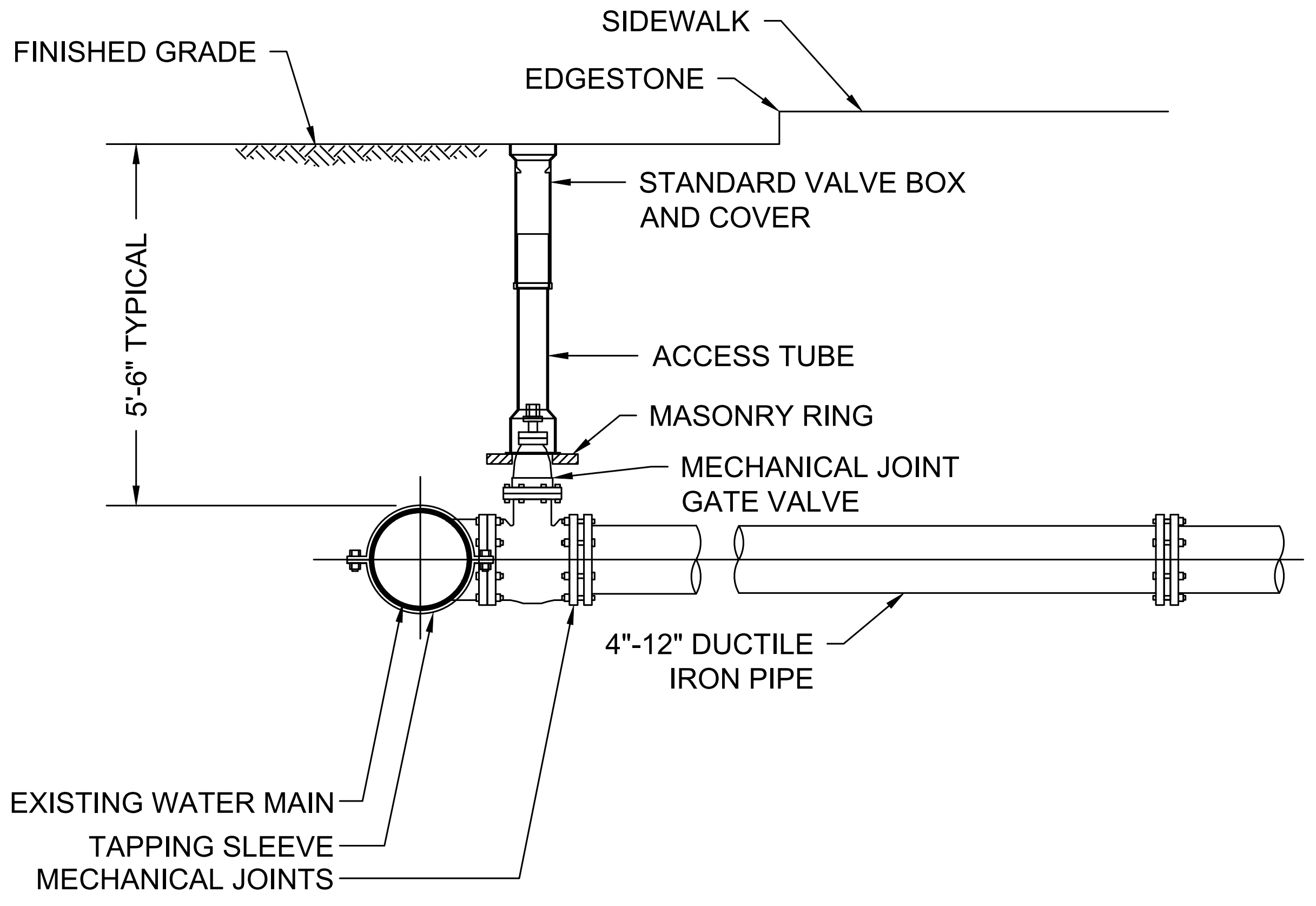
DESIGN THRUST BLOCKS OR OTHER SUITABLE ANCHORAGE TO SUIT ACTUAL CONDITIONS

THRUST BLOCK (A-01)
NOT TO SCALE



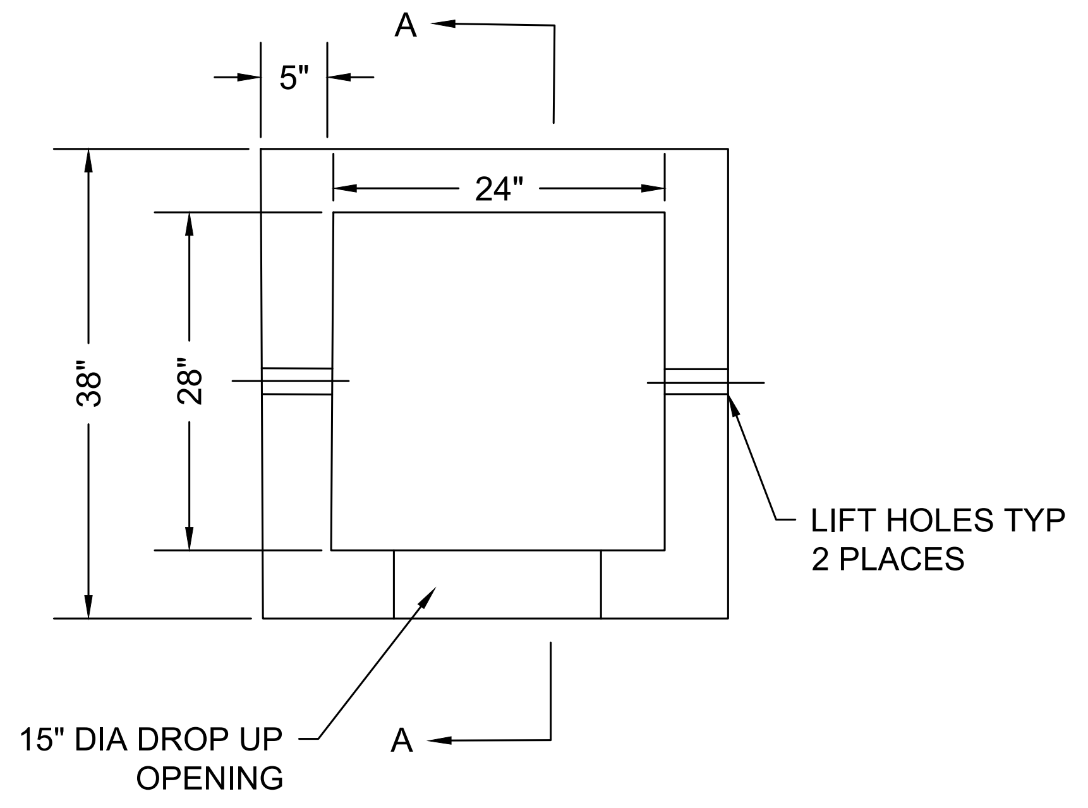
NOTE: CONTRACTOR TO SUBMIT METHOD OF BRACING WEIR

DRAIN MANHOLE (BYPASS STRUCTURE)
NOT TO SCALE

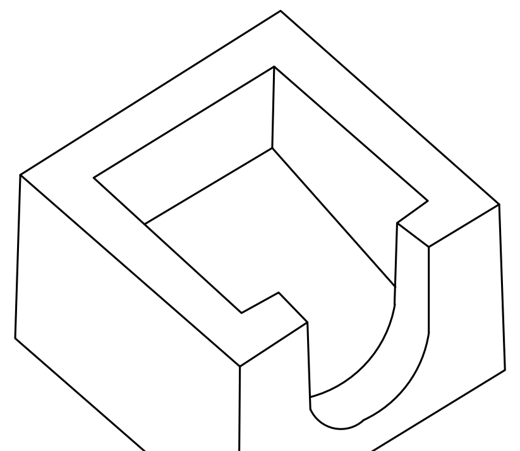


NOTES:
1. CONCRETE THRUST BLOCK TO BE USED ONLY WHERE IT WILL BEAR ON UNDISTURBED EARTH.
2. USE RESTRAINED JOINT FITTINGS OR TIE RODS WHERE CONCRETE THRUST BLOCK IS UNACCEPTABLE.
3. SIZE OF BLOCK OR MEGALUG TO BE DESIGNED FOR SPECIFIC CONDITIONS.

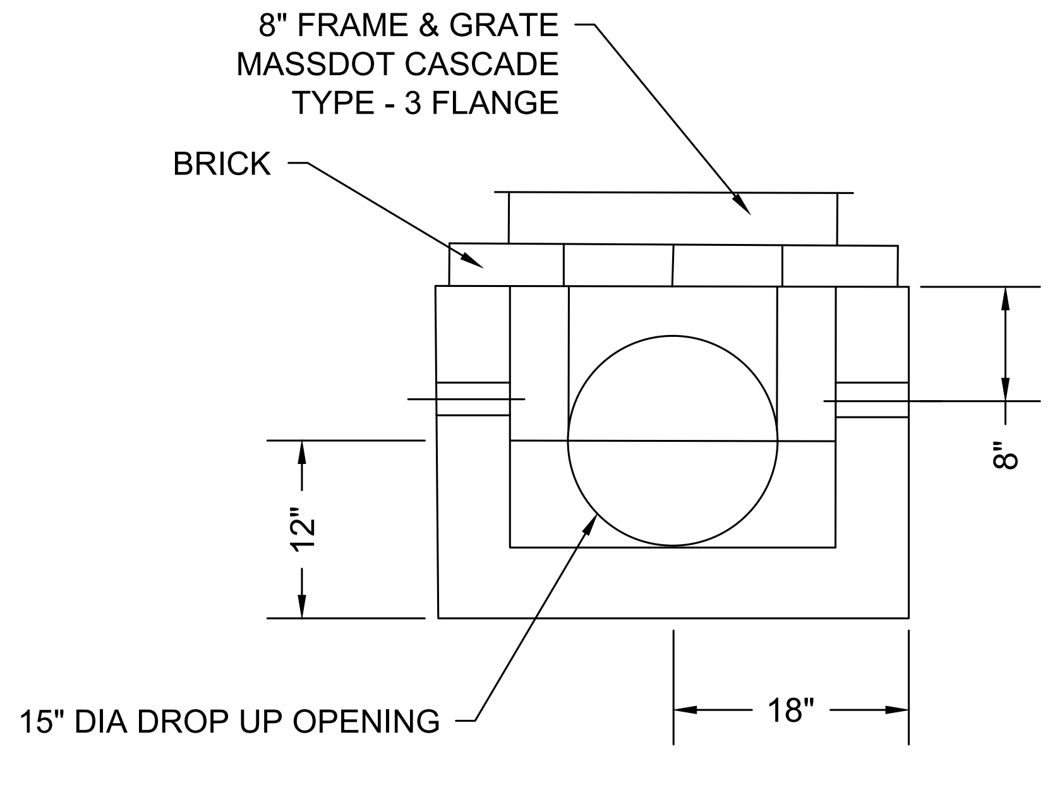
TAPPING SLEEVE & VALVE
NOT TO SCALE



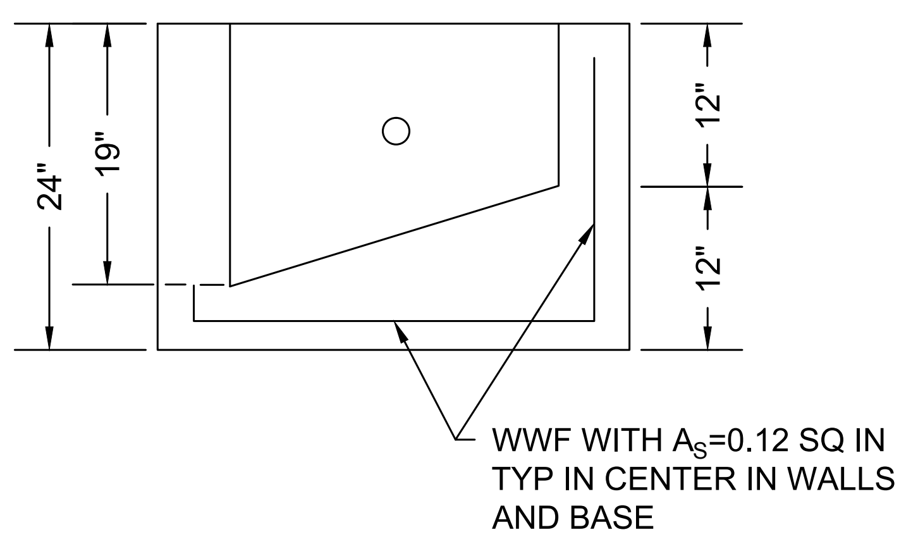
PLAN VIEW



ISOMETRIC



ELEVATION



SECTION A-A

NOTES:

1. DESIGNED FOR AASHTO HS25-44 LOADING
2. CONCRETE STRENGTH f'c=4000 PSI
3. REINFORCING STEEL: ASTM A185 (wwf) fy=60,000 PSI
4. CURB INLETS ARE REQUIRED WHEN GUTTER INLETS ARE INSTALLED AGAINST CURBING.

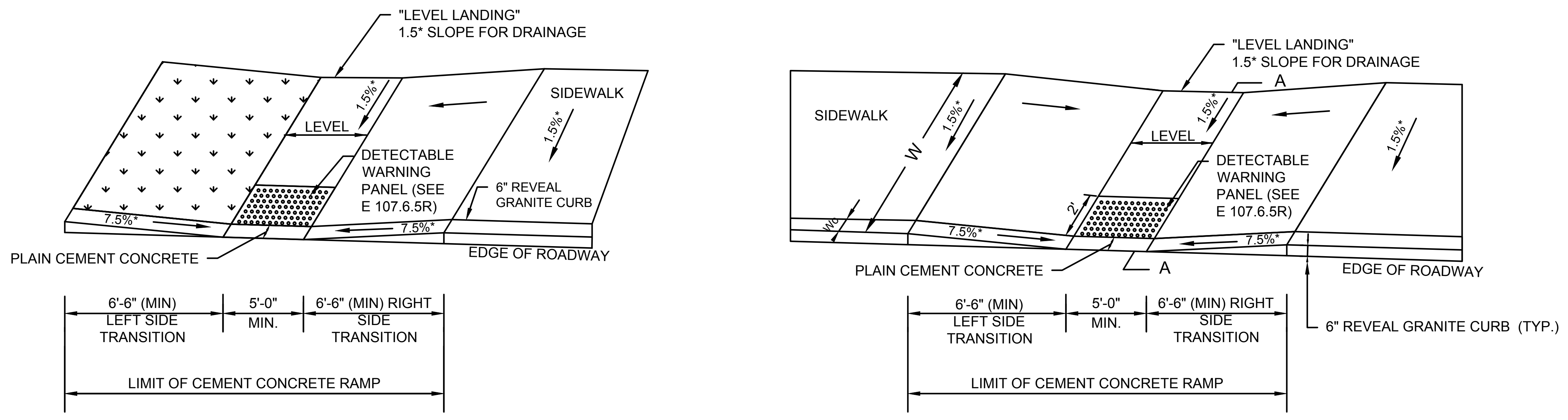
SPECIAL GUTTER INLET
NOT TO SCALE

606596_HD(CONST DET).DWG Plotted on 30-Mar-2018 2:17 PM

CHATHAM
MAIN STREET (ROUTE 28) FROM
GEORGE RYDER ROAD TO BARN HILL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	78	109
PROJECT FILE NO.	606596		

CONSTRUCTION DETAILS

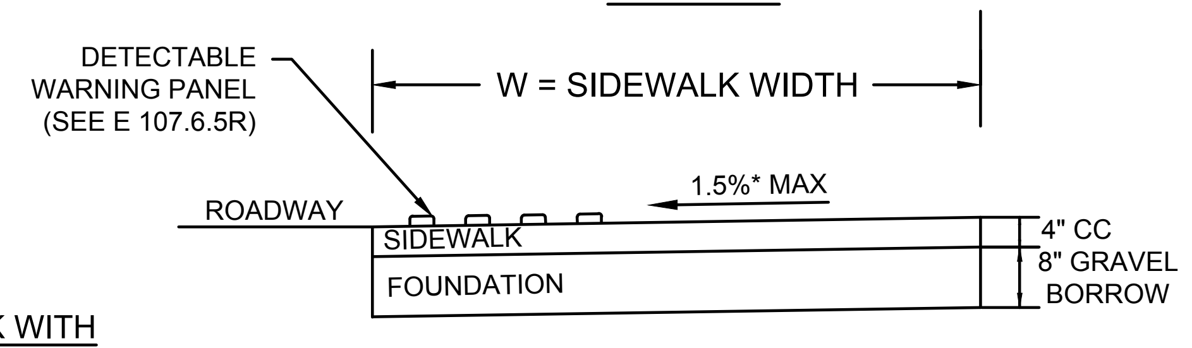

"LEVEL LANDING"
1.5" SLOPE FOR DRAINAGE
LEVEL
1.5%*
SIDEWALK
1.5%*
DETECTABLE WARNING PANEL (SEE E 107.6.5R)
6" REVEAL GRANITE CURB
7.5%*
7.5%*
PLAIN CEMENT CONCRETE
EDGE OF ROADWAY
6'-6" (MIN) LEFT SIDE TRANSITION
5'-0" MIN.
6'-6" (MIN) RIGHT SIDE TRANSITION
LIMIT OF CEMENT CONCRETE RAMP
"LEVEL LANDING"
1.5" SLOPE FOR DRAINAGE
A
SIDEWALK
1.5%*
W
Wc
2'
LEVEL
1.5%*
DETECTABLE WARNING PANEL (SEE E 107.6.5R)
1.5%*
7.5%*
7.5%*
PLAIN CEMENT CONCRETE
A
EDGE OF ROADWAY
6'-6" (MIN) LEFT SIDE TRANSITION
5'-0" MIN.
6'-6" (MIN) RIGHT SIDE TRANSITION
6" REVEAL GRANITE CURB (TYP.)
LIMIT OF CEMENT CONCRETE RAMP

LEGEND:

HSL = HIGH SIDE TRANSITION (SEE E 107.9.0R)
W = SIDEWALK WIDTH
Wc = CURB WIDTH
CC = CEMENT CONCRETE
* = TOLERANCE FOR CONSTRUCTION ±0.5%

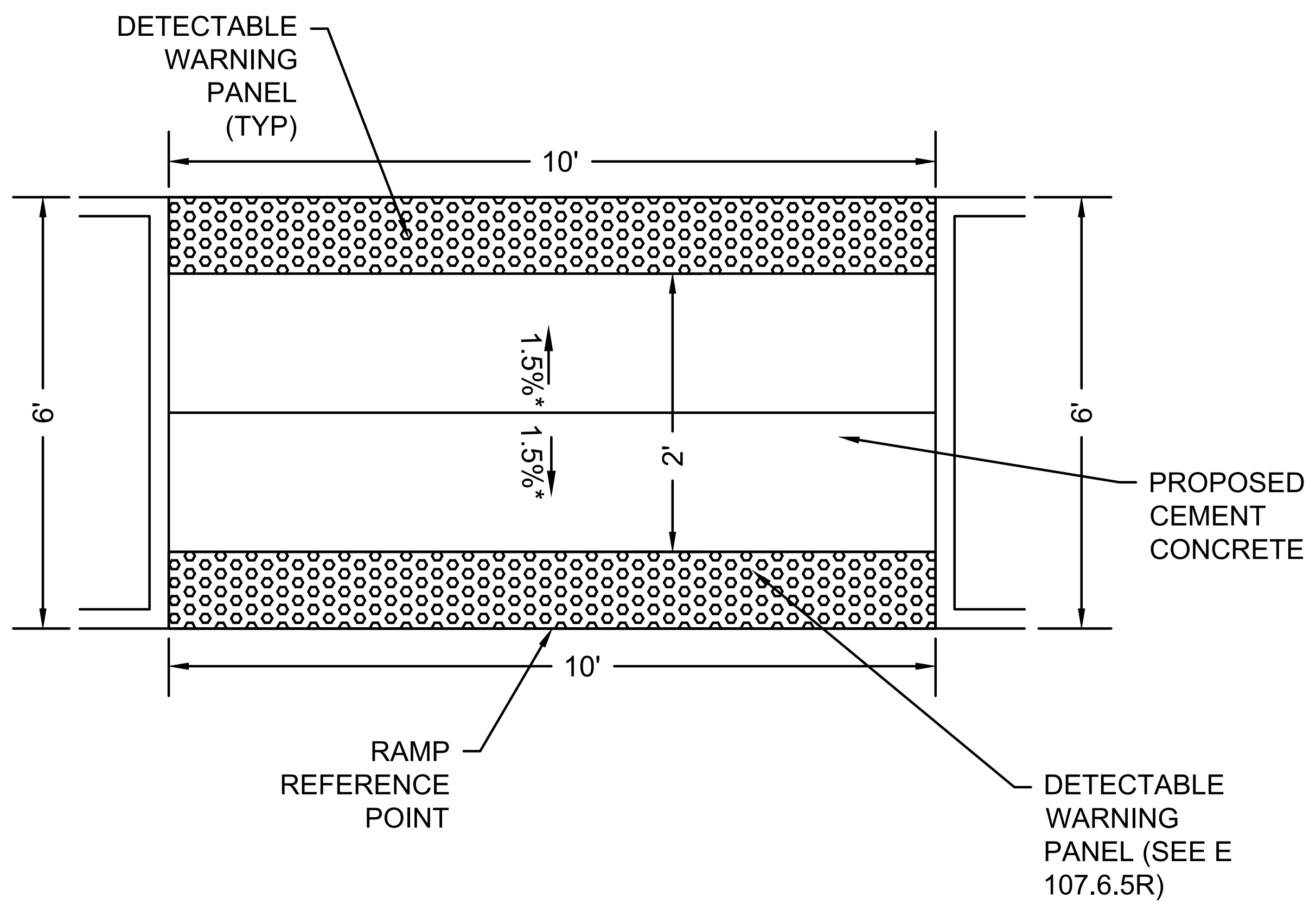
USEABLE SIDEWALK WIDTH PER AAB = W-WC

SECTION A-A

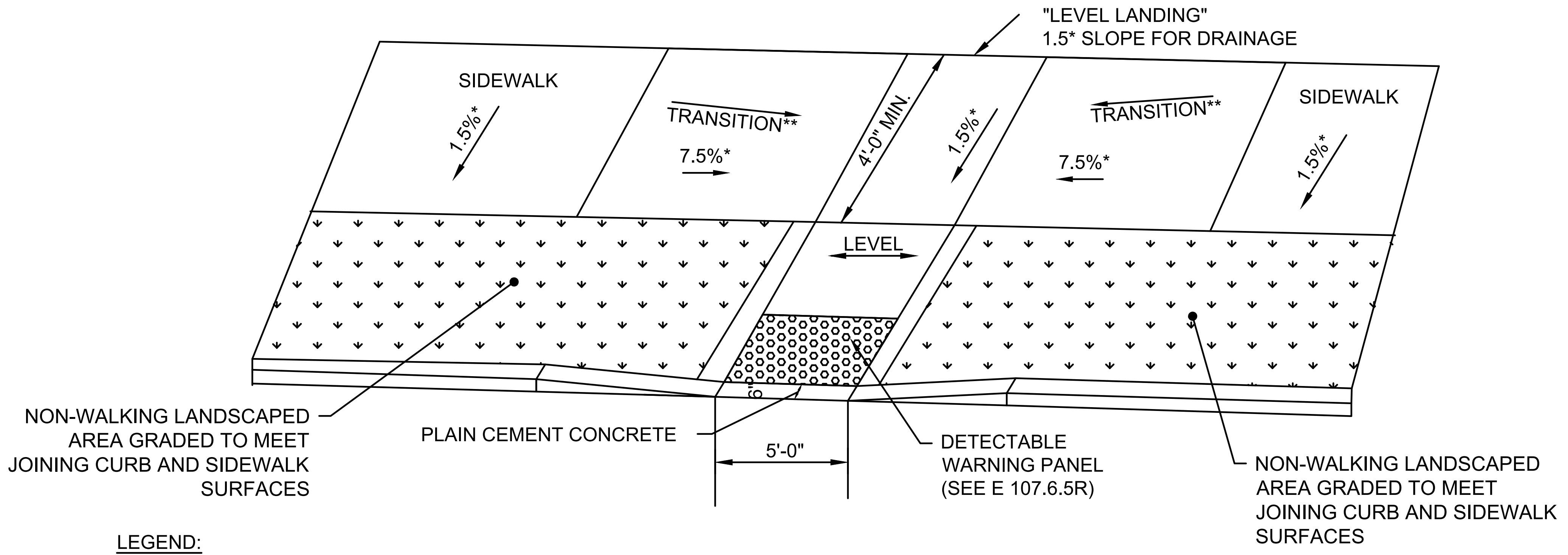


WHEELCHAIR RAMPS ON NARROW SIDEWALK WITH DETECTABLE WARNING PANEL
NOT TO SCALE

WHEELCHAIR RAMPS ON NARROW SIDEWALK WITH DETECTABLE WARNING PANEL (E107.2.1R)											
WCR #	ROADWAY ELEV. AT RAMP ℄	RAMP REFERENCE POINT			LENGTH OF PRIMARY RAMP	WIDTH OF SIDEWALK	WIDTH OF RAMP ENTRANCE	DEPTH OF LEVEL LANDING	TRANSITION		GUTTER SLOPE
		STREET	STATION	OFFSET					LEFT SIDE	RIGHT SIDE	
3	40.1	MAIN STREET	103+97	24' LT	-	6.0'	5.0'	6.0'	6.5'	7.7'	0.50% ±
5	39.1	GEORGE RYDER ROAD	300+90	19' LT	-	6.0'	5.0'	6.0'	11.0'	6.5'	-2.72% ±
8	39.7	MAIN STREET	105+59	18' RT	-	7.5'	10.0'	8.0'	6.5'	7.7'	-0.50% ±
14	49.7	MAIN STREET	114+60	18' RT	-	6.5'	5.0'	6.5'	9.0'	6.5'	2.00%±
15	49.6	BARN HILL ROAD	200+82	18' RT	-	6.5'	5.0'	6.5'	6.5'	9.0'	-1.85%±
16	49.6	BARN HILL ROAD	200+83	19' LT	-	6.5'	5.0'	6.5'	9.0'	-	-1.85% ±
17	50.4	MAIN STREET	116+30	18' RT	-	6.5'	5.0'	6.5'	6.5'	11.0'	-2.80% ±
22	53.8	MAIN STREET	119+26	16' RT	-	6.5'	5.0	6.5'	-	6.5'	1.03% ±


DETECTABLE WARNING PANEL (TYP)
10'
6'
6'
1.5%*
1.5%*
2'
PROPOSED CEMENT CONCRETE
10'
RAMP REFERENCE POINT
DETECTABLE WARNING PANEL (SEE E 107.6.5R)

MEDIAN PEDESTRIAN REFUGE AREA
NOT TO SCALE


"LEVEL LANDING"
1.5" SLOPE FOR DRAINAGE
SIDEWALK
1.5%*
TRANSITION**
7.5%*
4'-0" MIN.
1.5%*
TRANSITION**
7.5%*
SIDEWALK
1.5%*
LEVEL
6'
NON-WALKING LANDSCAPED AREA GRADED TO MEET JOINING CURB AND SIDEWALK SURFACES
PLAIN CEMENT CONCRETE
5'-0"
DETECTABLE WARNING PANEL (SEE E 107.6.5R)
NON-WALKING LANDSCAPED AREA GRADED TO MEET JOINING CURB AND SIDEWALK SURFACES

LEGEND:
* = TOLERANCE FOR CONSTRUCTION ± 0.5%
** = SEE E 107.9R FOR TRANSITION LENGTH

WHEELCHAIR RAMP WITH LANDSCAPE STRIP
NOT TO SCALE

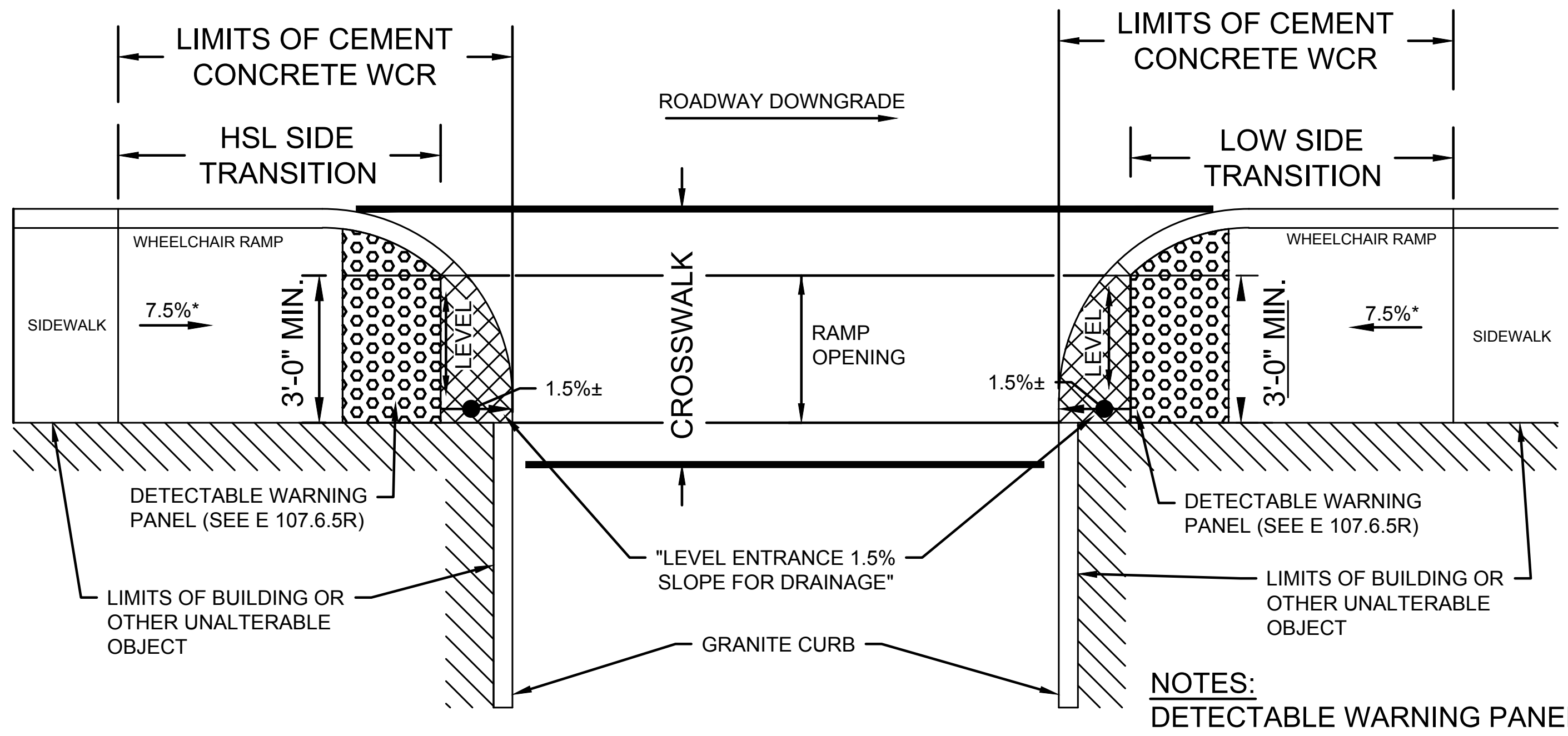
WHEELCHAIR RAMP WITH LANDSCAPED STRIP (E107.6.9)											
WCR #	ROADWAY ELEV. AT RAMP ℄	RAMP REFERENCE POINT			LENGTH OF PRIMARY RAMP	WIDTH OF SIDEWALK	WIDTH OF RAMP ENTRANCE	DEPTH OF LEVEL LANDING	TRANSITION		GUTTER SLOPE
		STREET	STATION	OFFSET					LEFT SIDE	RIGHT SIDE	
6	39.9	GEORGE RYDER ROAD	300+79	18' RT	-	10.0'	5.0'	10.0'	6.5'	11.0'	-2.72% ±
7	39.6	MAIN STREET	105+59	18' LT	5.0'	10.0'	10.0'	10.0'	7.7'	6.5'	-0.50% ±
11	45.1	MAIN STREET	108+57	16' LT	5.0	10.0'	5.0'	10.0'	6.5'	11.0'	2.24% ±
12	45.1	MAIN STREET	107+57	16' RT	4.0	5.5'	5.0'	5.5'	11.0'	6.5'	2.24% ±
13	49.6	MAIN STREET	114+63	18' LT	5.0'	10.0'	8.0'	10.0'	6.5'	7.7'	0.88% ±
18	50.4	MAIN STREET	116+30	18' LT	8.0'	10.0'	9.0'	4.0'	-	-	-2.71%±
27	38.3	GEORGE RYDER ROAD	302+14	13' RT	4.0'	10.0'	10.0'	10.0'	-	6.5'	-1.15%±

606596_HD(CONST DET).DWG Plotted on 30-Mar-2018 2:17 PM

CHATHAM
MAIN STREET (ROUTE 28) FROM GEORGE RYDER ROAD TO BARN HILL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	79	109
PROJECT FILE NO.		606596	

CONSTRUCTION DETAILS


LIMITS OF CEMENT CONCRETE WCR
HSL SIDE TRANSITION
ROADWAY DOWNGRADE
LIMITS OF CEMENT CONCRETE WCR
LOW SIDE TRANSITION
WHEELCHAIR RAMP
SIDEWALK
7.5%*
3'-0" MIN.
LEVEL
1.5%±
CROSSWALK
RAMP OPENING
1.5%±
LEVEL
3'-0" MIN.
WHEELCHAIR RAMP
7.5%*
SIDEWALK
DETECTABLE WARNING PANEL (SEE E 107.6.5R)
"LEVEL ENTRANCE 1.5% SLOPE FOR DRAINAGE"
DETECTABLE WARNING PANEL (SEE E 107.6.5R)
LIMITS OF BUILDING OR OTHER UNALTERABLE OBJECT
LIMITS OF BUILDING OR OTHER UNALTERABLE OBJECT
GRANITE CURB

LEGEND:

HSL = HIGH SIDE TRANSITION LENGTH (SEE E 107.9.0)
* = TOLERANCE FOR CONSTRUCTION ±0.5%

WHEELCHAIR RAMP FOR ONE CONTINUOUS DIRECTION OF PEDESTRIAN TRAVEL (E 107.6.0)
NOT TO SCALE

NOTES:
DETECTABLE WARNING PANEL LOCATED NOT LESS THAN 6" OR MORE THAN 24" FROM ROADWAY EDGE (GUTTER LINE). TRUNCATED DOMES TO BE ALIGNED WITH DIRECTION OF TRAVEL.

FOR DETAILS OF TRUNCATED DOMES SEE DRAWING E 107.6.5.

ROADWAY, GUTTER, AND FIRST 6" OF SIDEWALK TO BE ADJUSTED FOR FIELD CONDITIONS.

IF RADIUS OF CURVE PLACES THE DETECTABLE WARNING PANEL OUTSIDE 5' OF RAMP ENTRANCE, THE WARNING PANEL SHALL BE ANGLED ACROSS THE RAMP OPENING.

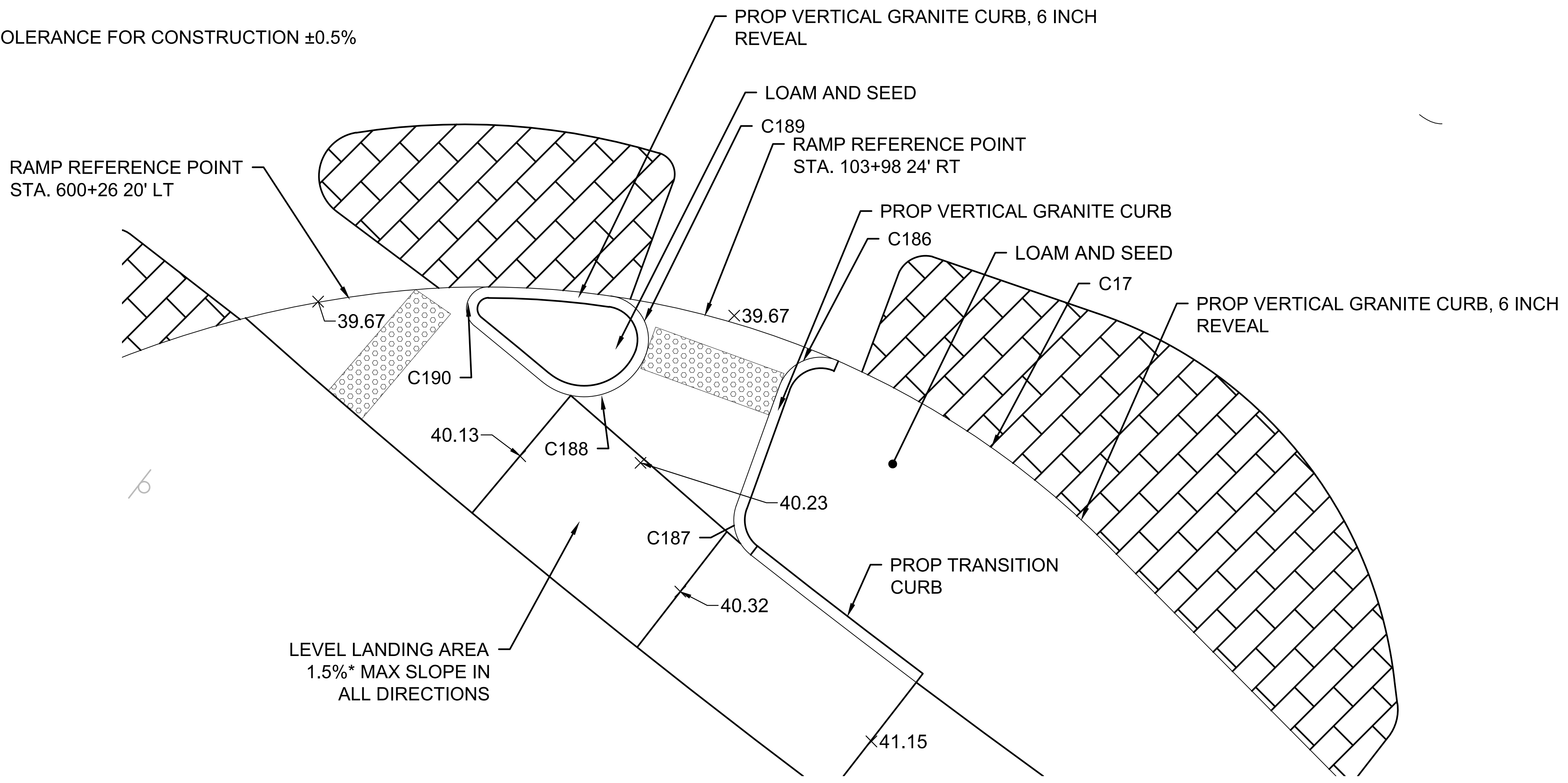
WHEELCHAIR RAMP FOR ONE CONTINUOUS DIRECTION OF PEDESTRIAN TRAVEL (E 107.6.0)

WCR #	ROADWAY ELEV. AT RAMP ℄	RAMP REFERENCE POINT			LENGTH OF PRIMARY RAMP	WIDTH OF SIDEWALK	WIDTH OF RAMP ENTRANCE	DEPTH OF LEVEL LANDING	TRANSITION		GUTTER SLOPE
		STREET	STATION	OFFSET					LEFT SIDE	RIGHT SIDE	
1	40.0	MAIN STREET	103+51	25' RT	7.7'	6.5'	3.5'	-	-	9.0'	-1.13% ±
25	40.4	MAIN STREET	101+56	21' RT	6.5'	6.0'	3.5'	-	7.7'	-	0.87% ±

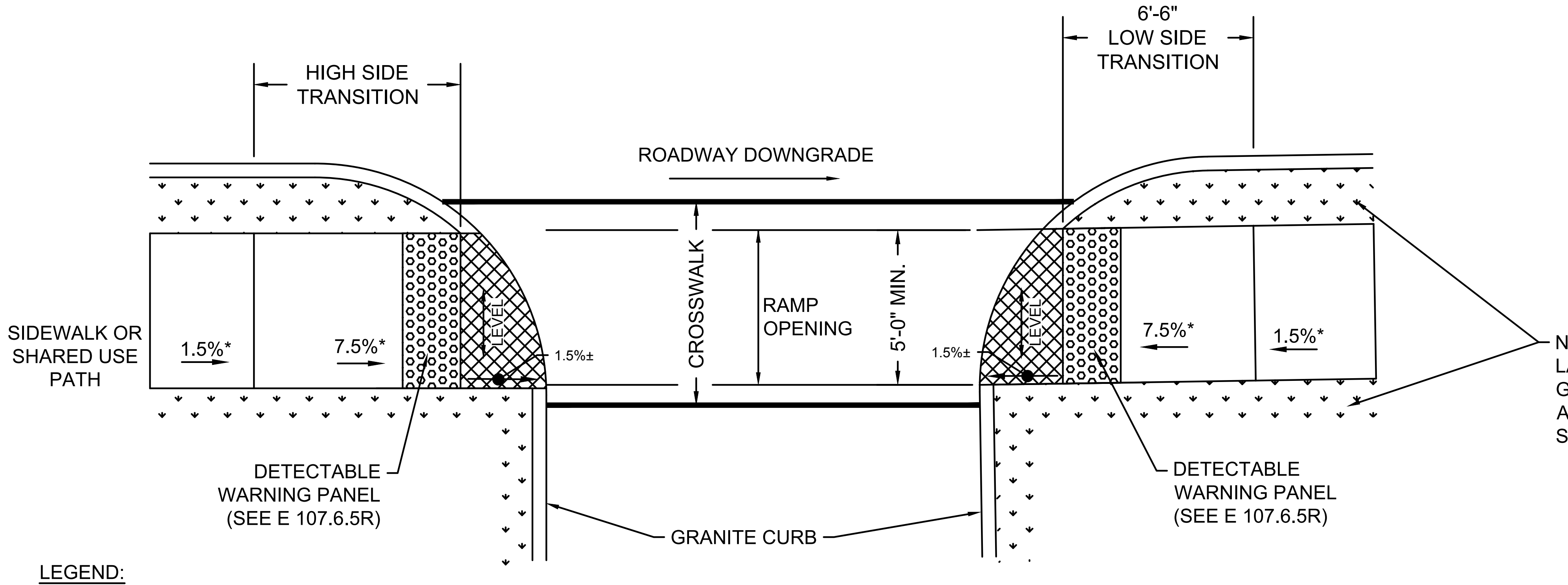
NOTES:

DETECTABLE WARNING PANEL SHALL BE PER MASSDOT CONSTRUCTION STANDARD DRAWING E 107.6.5R.

* TOLERANCE FOR CONSTRUCTION ±0.5%


PROP VERTICAL GRANITE CURB, 6 INCH REVEAL
LOAM AND SEED
C189
RAMP REFERENCE POINT STA. 103+98 24' RT
RAMP REFERENCE POINT STA. 600+26 20' LT
PROP VERTICAL GRANITE CURB
C186
LOAM AND SEED
C17
PROP VERTICAL GRANITE CURB, 6 INCH REVEAL
39.67
39.67
C190
40.13
C188
40.23
C187
PROP TRANSITION CURB
40.32
LEVEL LANDING AREA 1.5%* MAX SLOPE IN ALL DIRECTIONS
41.15

WHEELCHAIR RAMPS #2 AND #4 DETAIL
SCALE: 1"=5'


HIGH SIDE TRANSITION
6'-6" LOW SIDE TRANSITION
ROADWAY DOWNGRADE
SIDEWALK OR SHARED USE PATH
1.5%*
7.5%*
LEVEL
1.5%±
CROSSWALK
RAMP OPENING
5'-0" MIN.
1.5%±
LEVEL
7.5%*
1.5%*
NON-WALKING LANDSCAPED AREA GRADED TO MEET ADJOINING CURB AND SIDEWALK SURFACES
DETECTABLE WARNING PANEL (SEE E 107.6.5R)
GRANITE CURB
DETECTABLE WARNING PANEL (SEE E 107.6.5R)

LEGEND:

HSL = HIGH SIDE TRANSITION LENGTH (SEE E 107.9.0)
* = TOLERANCE FOR CONSTRUCTION ±0.5%

MODIFIED WHEELCHAIR RAMP FOR ONE CONTINUOUS DIRECTION OF PEDESTRIAN TRAVEL WITH LANDSCAPE STRIP
NOT TO SCALE

NOTES:
TRUNCATED DOMES TO BE ALIGNED WITH DIRECTION OF TRAVEL.

FOR DETAILS OF TRUNCATED DOMES SEE DRAWING E 107.6.5.

ROADWAY, GUTTER, AND FIRST 6" OF SIDEWALK TO BE ADJUSTED FOR FIELD CONDITIONS.

IF RADIUS OF CURVE PLACES THE DETECTABLE WARNING PANEL OUTSIDE 5' OF RAMP ENTRANCE, THE WARNING PANEL SHALL BE ANGLED ACROSS THE RAMP OPENING.

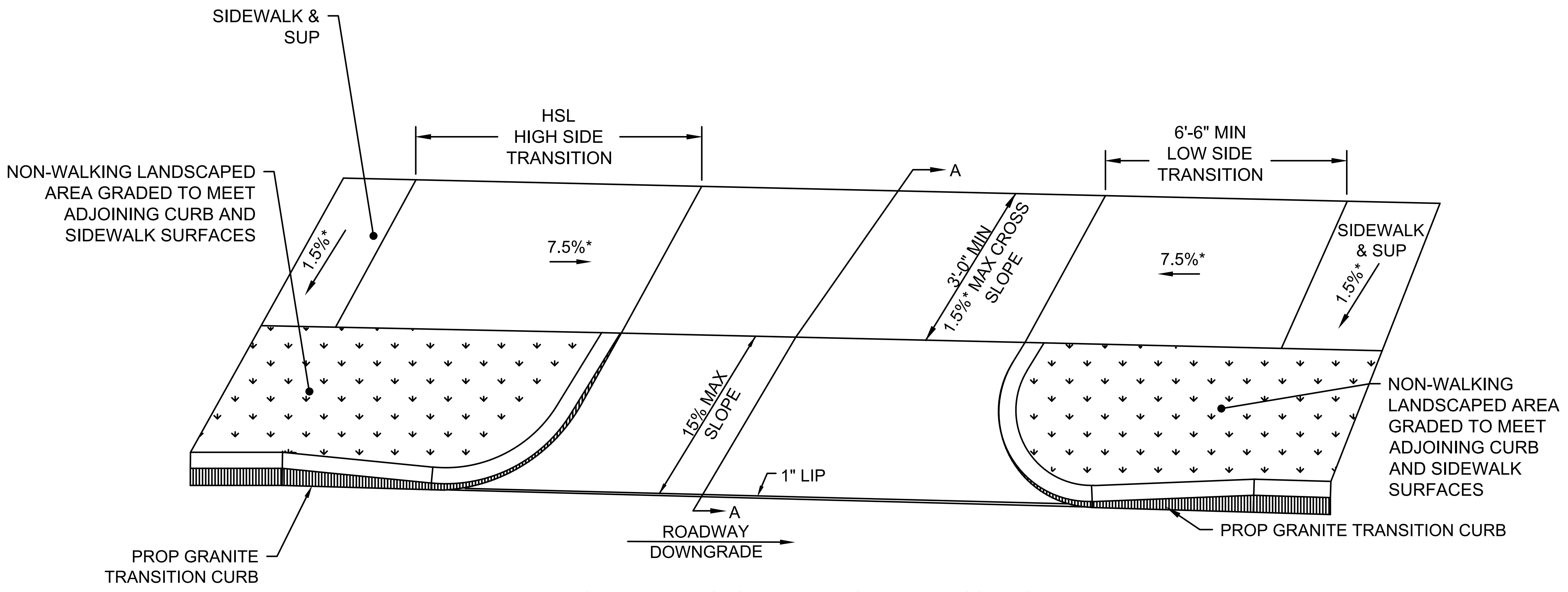
MODIFIED WHEELCHAIR RAMP FOR ONE CONTINUOUS DIRECTION OF PEDESTRIAN TRAVEL WITH LANDSCAPE STRIP

WCR #	ROADWAY ELEV. AT RAMP ℄	RAMP REFERENCE POINT			LENGTH OF PRIMARY RAMP	WIDTH OF SIDEWALK	WIDTH OF RAMP ENTRANCE	DEPTH OF LEVEL LANDING	TRANSITION		GUTTER SLOPE
		STREET	STATION	OFFSET					LEFT SIDE	RIGHT SIDE	
9	44.2	MAIN STREET	107+91	23' RT	6.5'	5.5'	3.5'	-	-	6.5'	2.24% ±
10	45.1	MAIN STREET	108+31	23' RT	7.7'	5.5'	3.5'	-	11.0'	-	2.24% ±
19	51.7	MAIN STREET	117+93	25' LT	6.5'	6.0'	3.5'	-	6.5'	-	1.03% ±
20	52.2	MAIN STREET	118+39	28' LT	7.7'	6.0'	3.5'	-	-	9.0'	1.03% ±
26	39.8	MAIN STREET	100+81	24' LT	9.0'	6.0'	3.5'	-	-	7.7'	0.87% ±

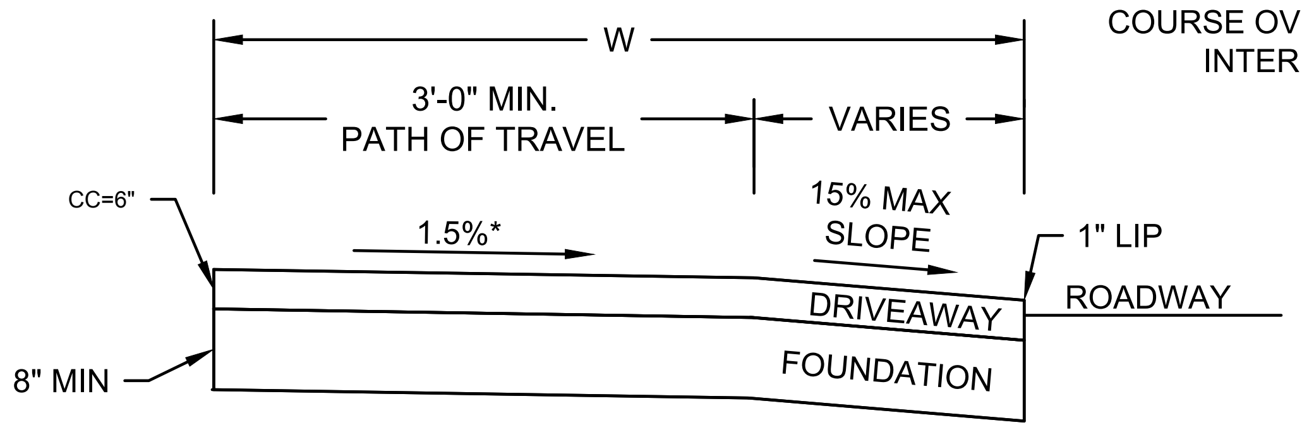
CHATHAM
MAIN STREET (ROUTE 28) FROM GEORGE RYDER ROAD TO BARN HILL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	80	109
PROJECT FILE NO.	606596		

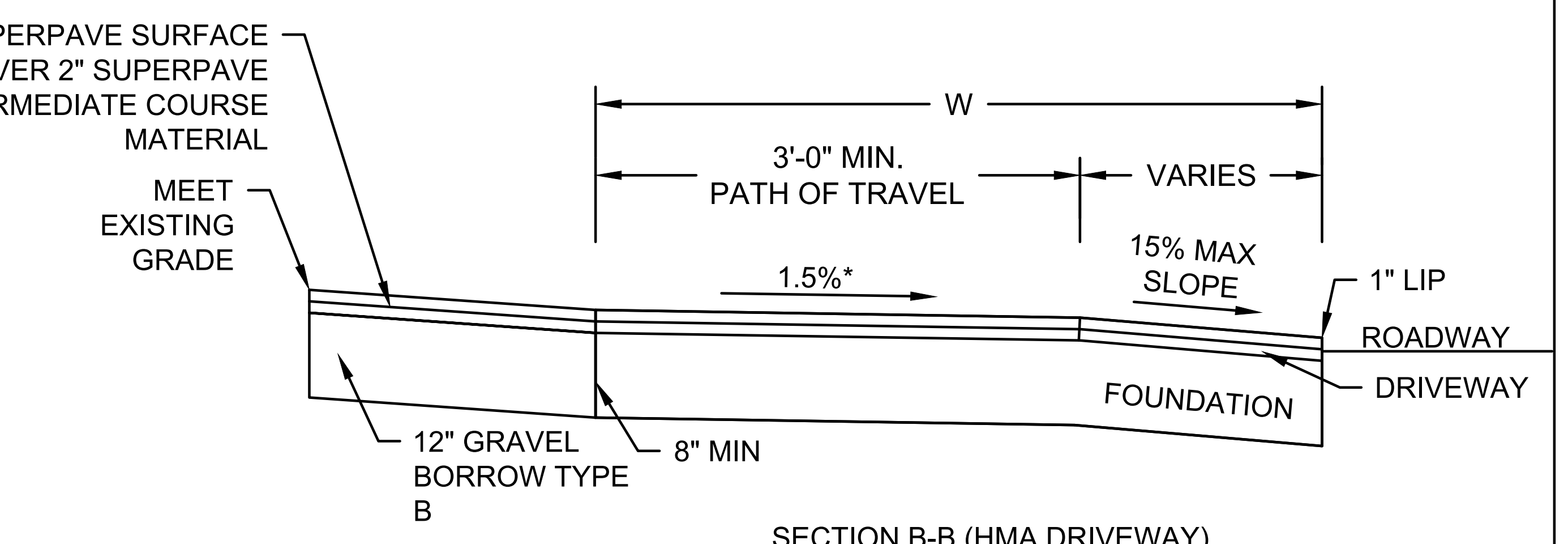
CONSTRUCTION DETAILS


SIDEWALK & SUP
HSL
HIGH SIDE TRANSITION
6'-6" MIN
LOW SIDE TRANSITION
NON-WALKING LANDSCAPED AREA GRADED TO MEET ADJOINING CURB AND SIDEWALK SURFACES
A
1.5%*
7.5%*
3'-0" MIN
1.5%* MAX CROSS SLOPE
7.5%*
SIDEWALK & SUP
1.5%*
15% MAX SLOPE
NON-WALKING LANDSCAPED AREA GRADED TO MEET ADJOINING CURB AND SIDEWALK SURFACES
1" LIP
A
ROADWAY DOWNGRADE
PROP GRANITE TRANSITION CURB
PROP GRANITE TRANSITION CURB

SIDEWALK THROUGH DRIVEWAYS WITH LANDSCAPE STRIP
NOT TO SCALE



SECTION A-A (CEM CONCRETE DRIVEWAY)



SECTION B-B (HMA DRIVEWAY)

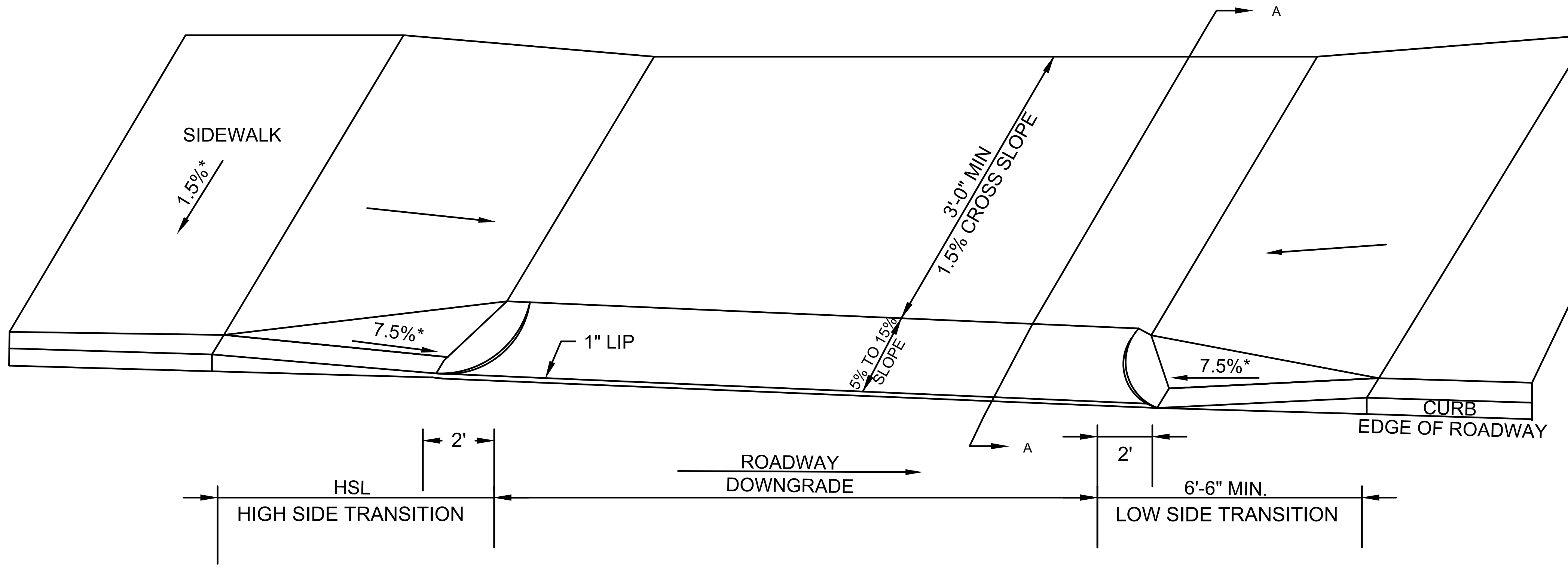
LEGEND:

HSL = HIGH SIDE TRANSITION (SEE E 107.9.0R)
W = SIDEWALK WIDTH
* = TOLERANCE FOR CONSTRUCTION ±0.5%
CC = CEMENT CONCRETE
HMA = HOT MIX ASPHALT

NOTES:
* CONSTRUCTION TOLERANCE ±0.5%

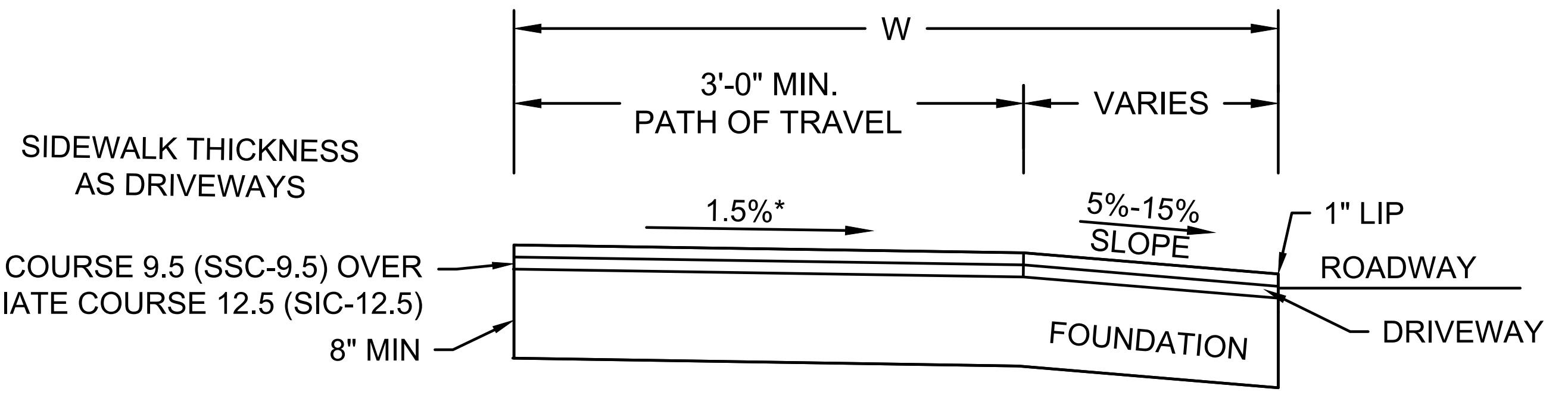
SIDEWALK THROUGH DRIVEWAYS WITH LANDSCAPE STRIP									
DRIVEWAY #	DRIVEWAY REFERENCE POINT			TRANSITION		ROADWAY ELEV. AT DRIVEWAY ℄	WIDTH OF OPENING	GUTTER SLOPE
	STREET	STATION	OFFSET	LEFT	RIGHT			
1	MAIN STREET	103+00	18' LT	7.7'	6.5'**	40.6	65'	-0.63%
2	GEORGE RYDER ROAD	301+65	17' RT	6.5'	7.7'	38.0	30'	-0.61%
3	MAIN STREET	106+25	17' LT	6.5'	9.0'	39.93	30'	1.54%
4	MAIN STREET	106+83	17' LT	6.5'	11.0'	41.2	24'	2.24%
6	MAIN STREET	107+60	16' LT	6.5'	11.0'	42.9	24'	2.24%
7	MAIN STREET	109+50	16' RT	11.0'	6.5'	47.2	24'	2.24%
8	MAIN STREET	109+59	18' LT	6.5'	11.0'	47.2	22'	2.24%
9	MAIN STREET	110+50	17' RT	9.0'	6.5'	49.2	24'	1.79%
10	MAIN STREET	111+00	16' RT	9.0'	6.5'	49.9	24'	1.08%
11	MAIN STREET	111+00	16' LT	6.5'	9.0'	49.9	14'	1.08%
12	MAIN STREET	111+70	17' RT	7.7'	6.5'	50.4	24'	0.44%
13	MAIN STREET	111+83	16' LT	6.5'	7.7'	50.4	9'	0.29%
14	MAIN STREET	112+35	17' RT	6.5'	7.7'	50.4	24'	-0.11%
15	MAIN STREET	113+00	16' RT	6.5'	7.7'	50.1	50'	-0.62%
20	MAIN STREET	116+74	19' LT	6.5'	9.0'	50.7	25'	1.06%

** DRIVEWAY 1 DOES NOT HAVE A LANDSCAPE STRIP ON THE RIGHT SIDE.



LEGEND:

HSL = HIGH SIDE TRANSITION
W = SIDEWALK WIDTH
* = TOLERANCE FOR CONSTRUCTION ±0.5%
HMA = HOT MIX ASPHALT


SIDEWALK THICKNESS AS DRIVEWAYS
W
3'-0" MIN.
PATH OF TRAVEL
VARIES
1.5%*
5%-15% SLOPE
1" LIP
ROADWAY
HMA=1.5" SUPERPAVE SURFACE COURSE 9.5 (SSC-9.5) OVER 2.0" SUPERPAVE INTERMEDIATE COURSE 12.5 (SIC-12.5)
8" MIN
FOUNDATION
DRIVEWAY

SECTION A-A

SIDEWALK THROUGH DRIVEWAYS WITH CURB RETURNS
NOT TO SCALE

SIDEWALK THROUGH DRIVEWAYS WITH CURB RETURNS										
DRIVEWAY #	DRIVEWAY REFERENCE POINT			TRANSITION		WIDTH OF SIDEWALK	WIDTH OF PED TRAVEL PATH	ROADWAY ELEV. AT DRIVEWAY ℄	WIDTH OF OPENING	GUTTER SLOPE
	STREET	STATION	OFFSET	LEFT	RIGHT					
5	MAIN STREET	106+50	18' RT	11.0'	6.5'	40.7	29'	40.7	29'	2.24%
16	BARN HILL ROAD	201+40	13' RT	6.5'	9.0'	6.5'	-	48.4	30'	-1.85%
19	MAIN STREET	116+71	18' RT	7.7'	6.5'	6.5'	3.5'	50.7	24'	0.74%
21	MAIN STREET	118+04	19' RT	9.0'	6.5'	6.5'	4.5'	51.9	28'	1.06%

606596_HD(CONST DET).DWG Plotted on 30-Mar-2018 2:17 PM

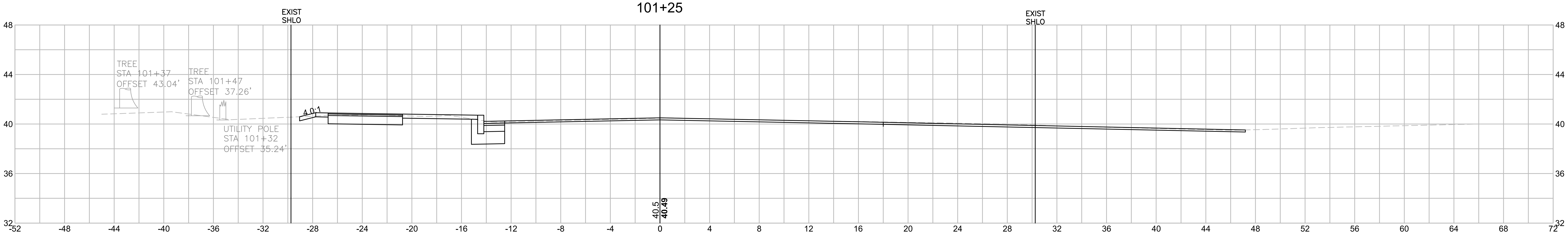
CHATHAM
MAIN STREET (ROUTE 28) FROM
GEORGE RYDER ROAD TO BARN HILL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	81	109
	PROJECT FILE NO.	606596	

CROSS SECTIONS
MAIN STREET

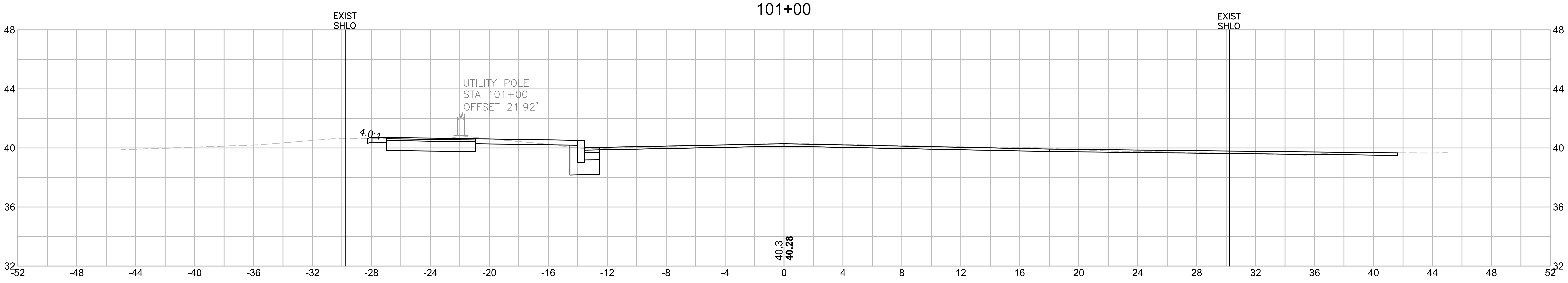
606596_HD(CROSS SECTIONS MAIN).DWG Plotted on 30-Mar-2018 2:18 PM

101+25



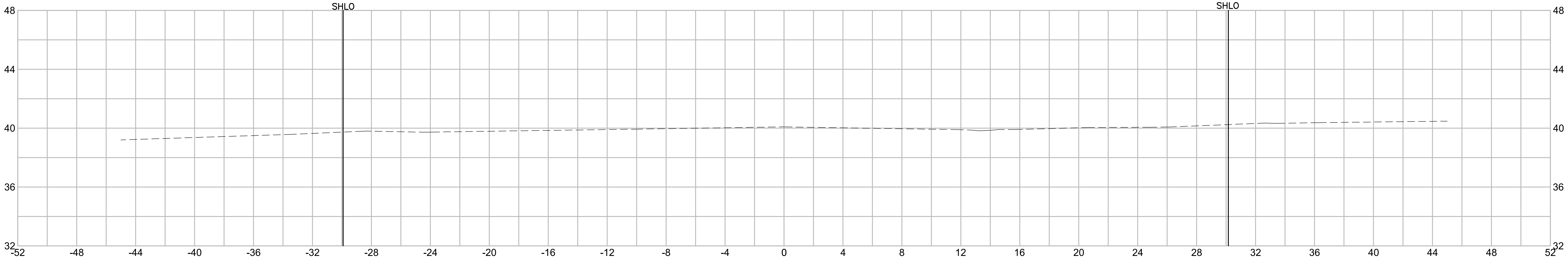
CUT: 10.76 SF
FILL: 0.00 SF

101+00



CUT: 9.98 SF
FILL: .07 SF

100+76.61



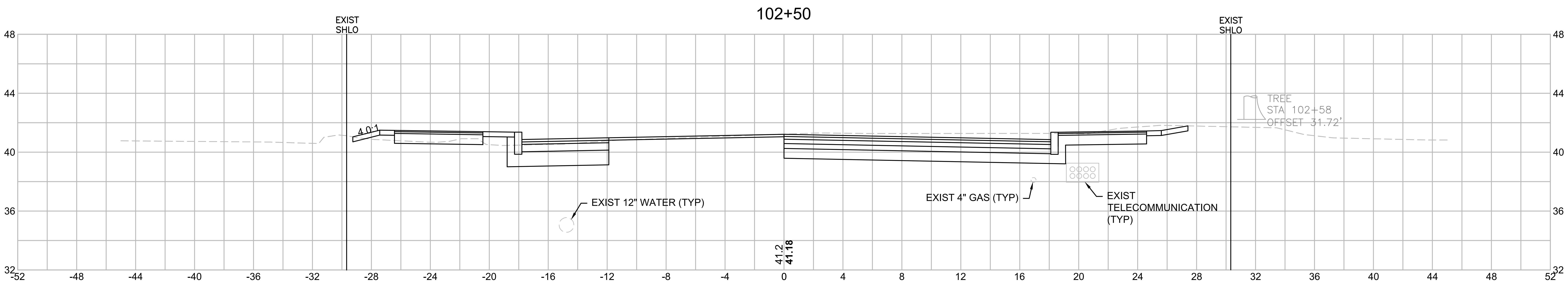
CUT: 0.00 SF
FILL: 0.00 SF

4 0 4 8
SCALE IN FEET

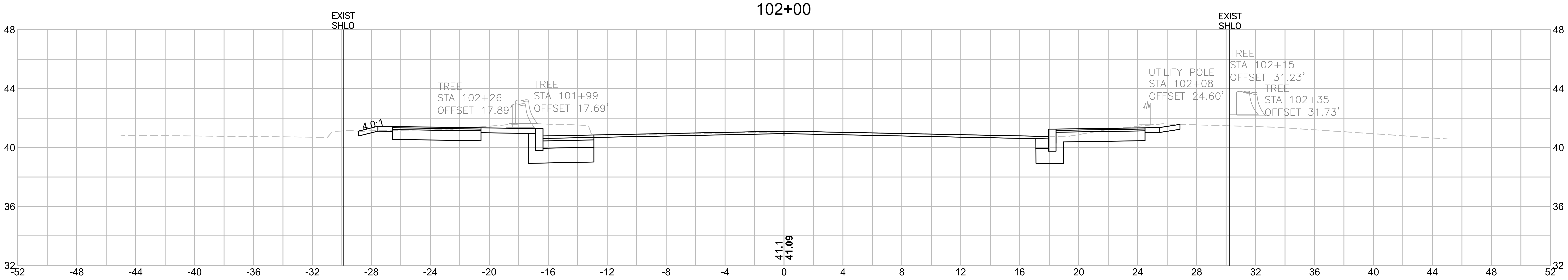
CHATHAM
MAIN STREET (ROUTE 28) FROM
GEORGE RYDER ROAD TO BARN HILL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	82	109
PROJECT FILE NO.	606596		

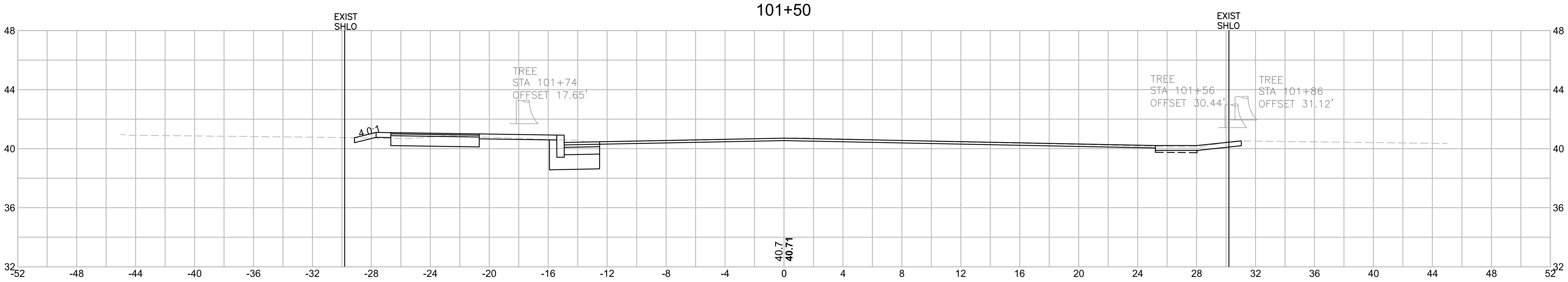
CROSS SECTIONS
MAIN STREET



CUT: 54.45 SF
FILL: 1.39 SF


102+00
EXIST SHLO
EXIST SHLO
4.0:1
TREE STA 102+26 OFFSET 17.89'
TREE STA 101+99 OFFSET 17.69'
UTILITY POLE STA 102+08 OFFSET 24.60'
TREE STA 102+15 OFFSET 31.23'
TREE STA 102+35 OFFSET 31.73'
41.1
41.09
48
44
40
36
32
-52 -48 -44 -40 -36 -32 -28 -24 -20 -16 -12 -8 -4 0 4 8 12 16 20 24 28 32 36 40 44 48 52

CUT: 26.37 SF
FILL: 0.00 SF



CUT: 12.91 SF
FILL: 0.06 SF

606596_HD(CROSS SECTIONS MAIN).DWG Plotted on 30-Mar-2018 2:18 PM

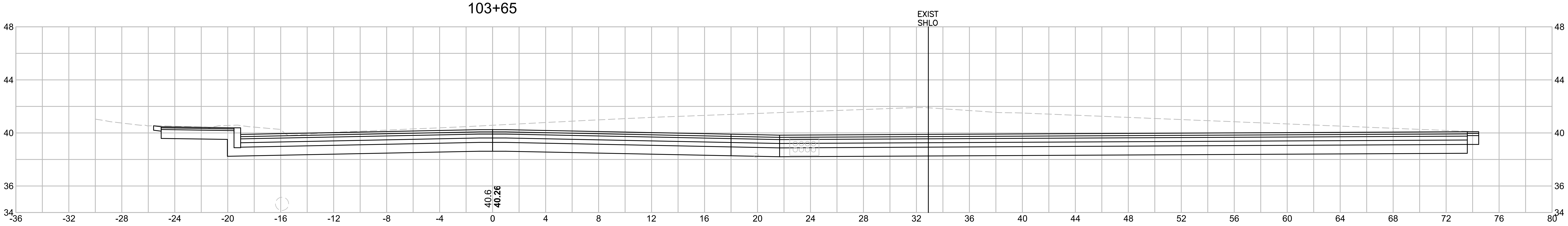
CHATHAM
MAIN STREET (ROUTE 28) FROM
GEORGE RYDER ROAD TO BARN HILL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	83	109
PROJECT FILE NO.	606596		

CROSS SECTIONS
MAIN STREET

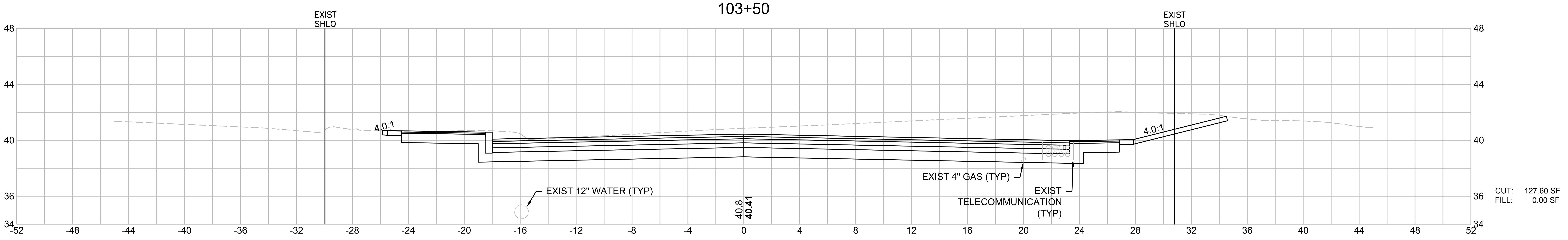
606596_HD(CROSS SECTIONS MAIN).DWG Plotted on 30-Mar-2018 2:18 PM

103+65



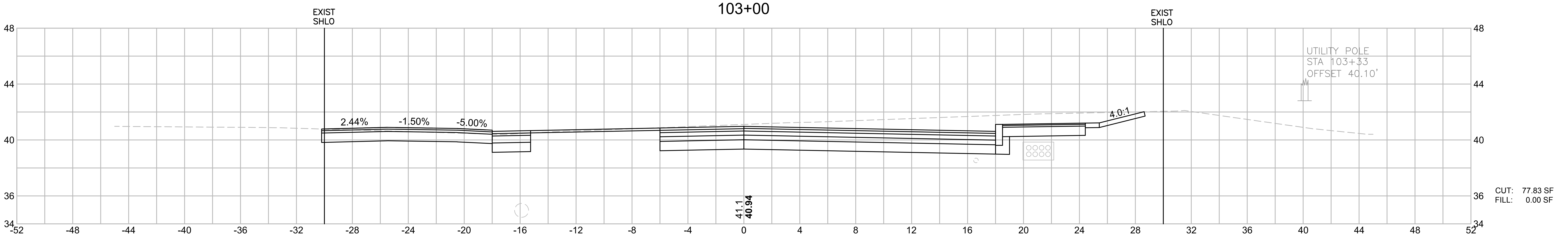
CUT: 192.22 SF
FILL: 0.00 SF

103+50



CUT: 127.60 SF
FILL: 0.00 SF

103+00



CUT: 77.83 SF
FILL: 0.00 SF

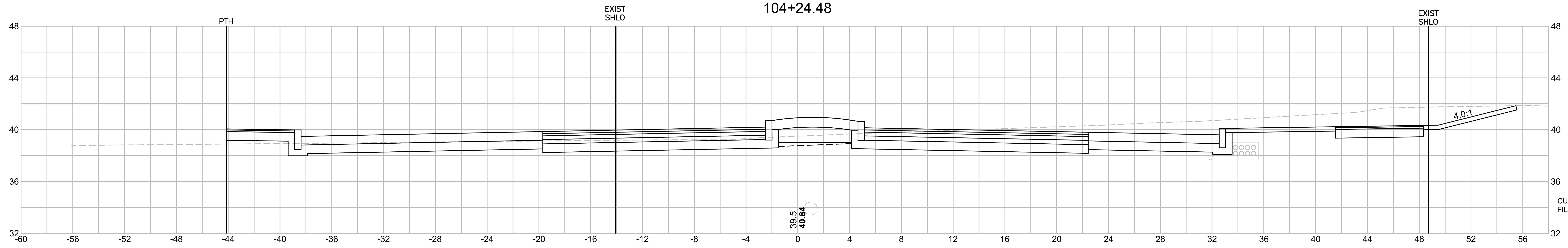
SCALE IN FEET

CHATHAM
MAIN STREET (ROUTE 28) FROM GEORGE RYDER ROAD TO BARN HILL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	84	109
PROJECT FILE NO.	606596		

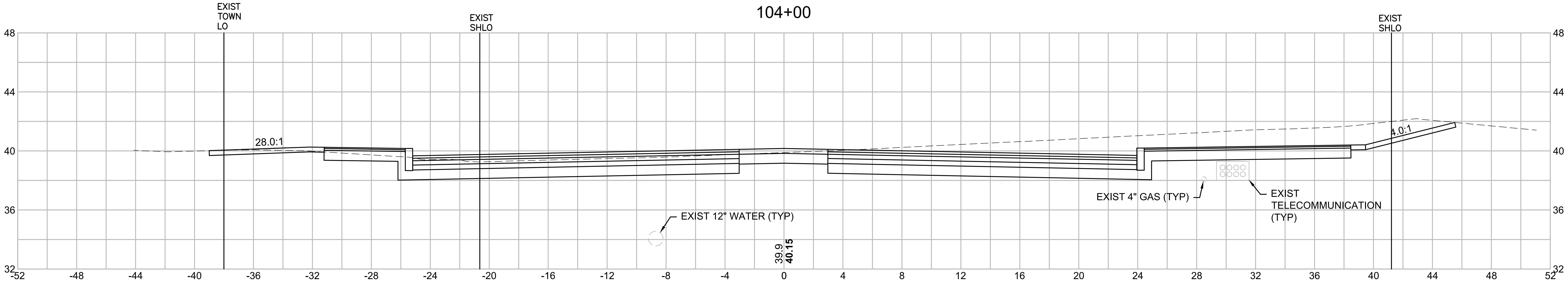
CROSS SECTIONS
MAIN STREET

104+24.48



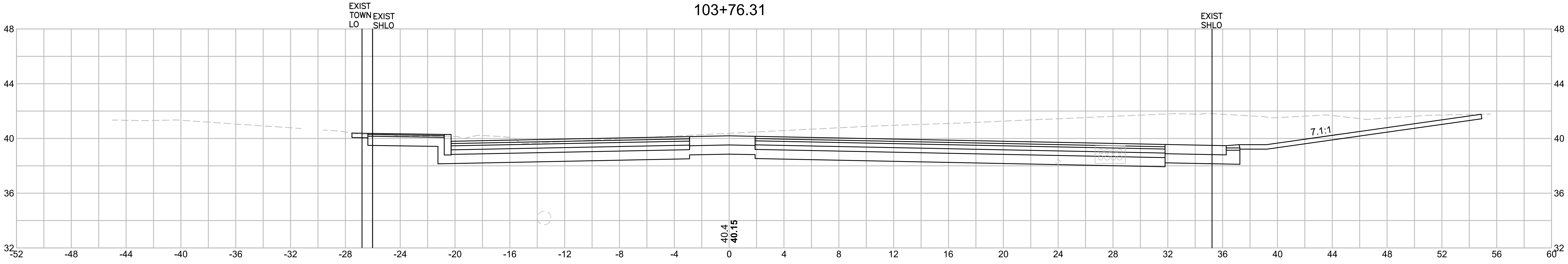
CUT: 120.13 SF
FILL: 5.26 SF

104+00



CUT: 122.16 SF
FILL: 0.00 SF

103+76.31



CUT: 173.19 SF
FILL: 0.00 SF

SCALE IN FEET

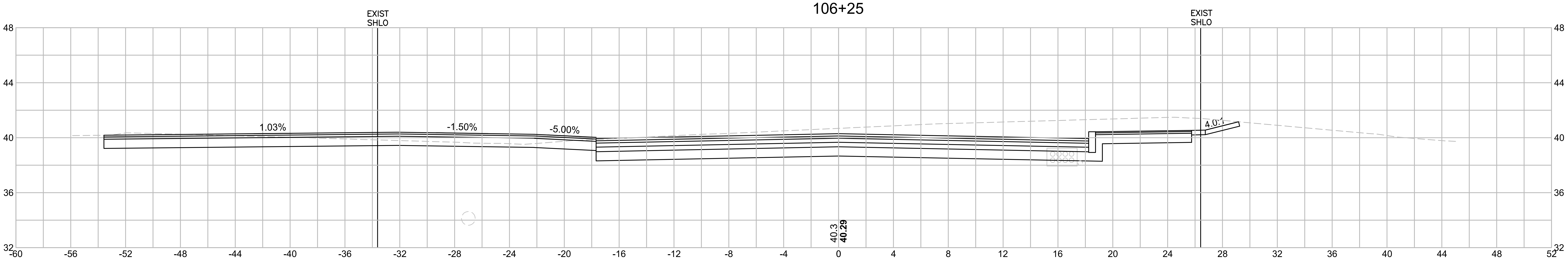
CHATHAM
MAIN STREET (ROUTE 28) FROM
GEORGE RYDER ROAD TO BARN HILL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	85	109
PROJECT FILE NO.	606596		

CROSS SECTIONS
MAIN STREET

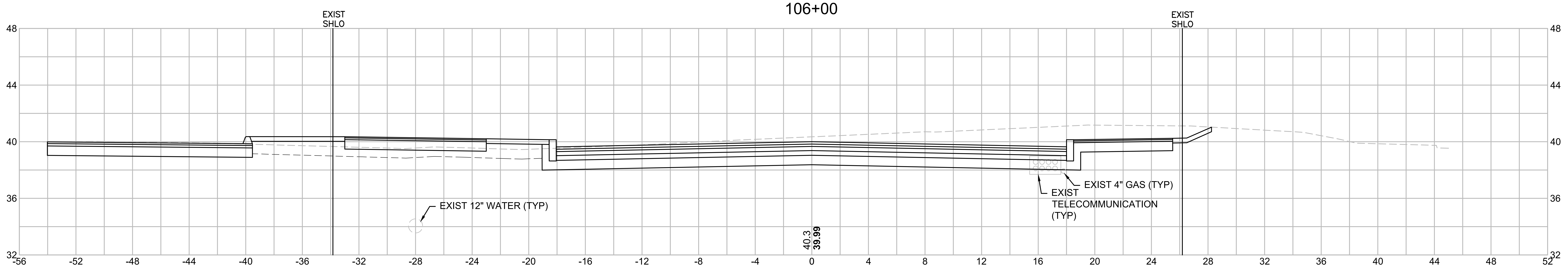
606596_HD(CROSS SECTIONS MAIN).DWG Plotted on 30-Mar-2018 2:19 PM

106+25



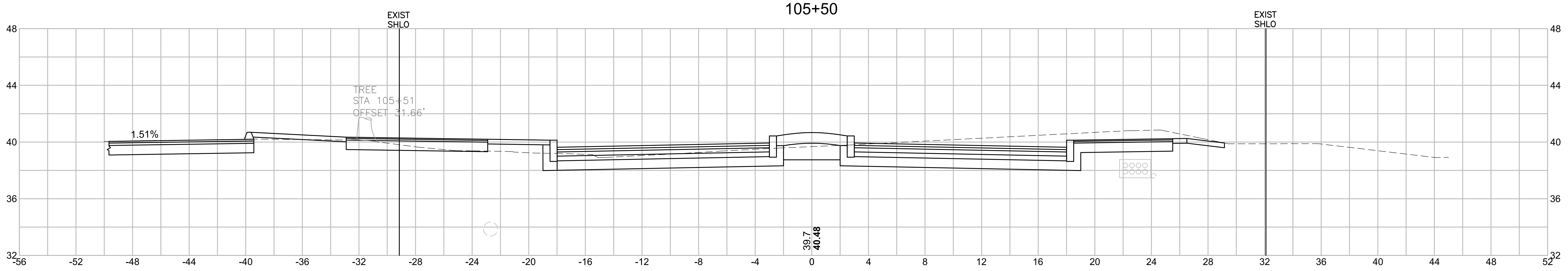
CUT: 117.78 SF
FILL: 0.00 SF

106+00



CUT: 124.03 SF
FILL: 15.32 SF

105+50



CUT: 80.74 SF
FILL: 2.29 SF

SCALE IN FEET

CHATHAM
MAIN STREET (ROUTE 28) FROM
GEORGE RYDER ROAD TO BARN HILL ROAD

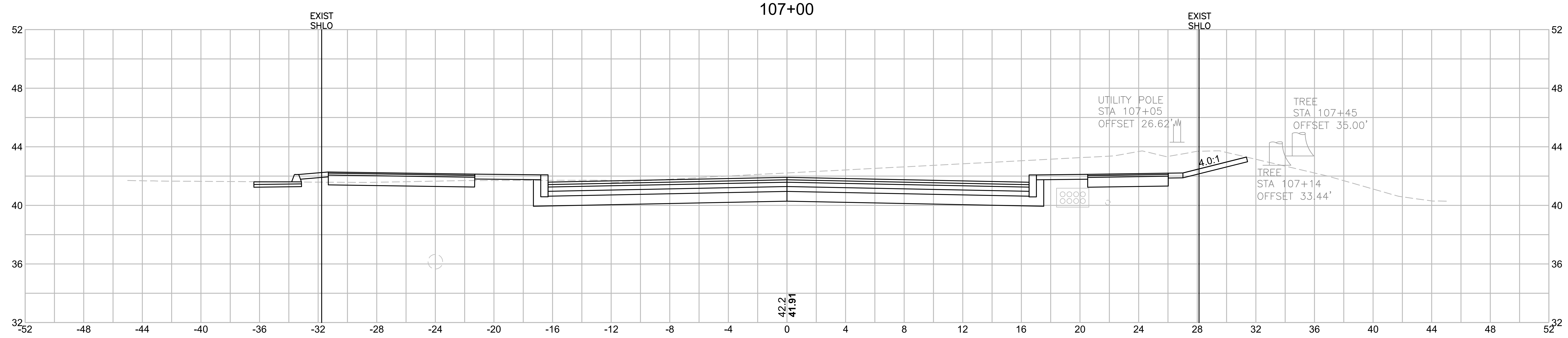
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	86	109
	PROJECT FILE NO.	606596	

CROSS SECTIONS
MAIN STREET

Plotted on 30-Mar-2018 2:19 PM

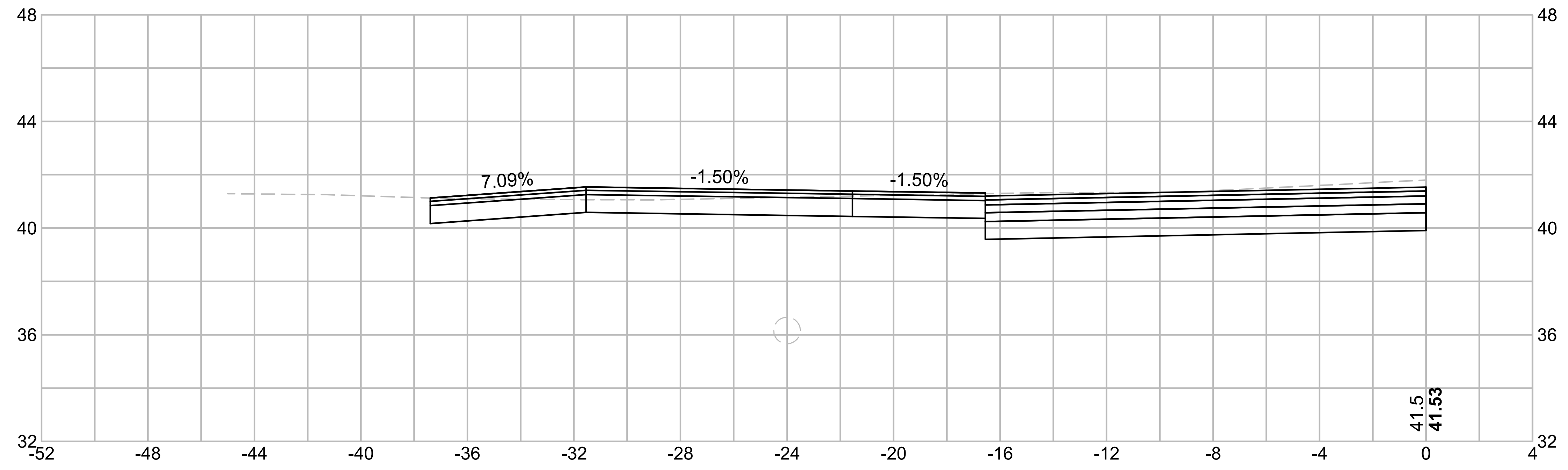
606596_HD(CROSS SECTIONS MAIN).DWG

107+00



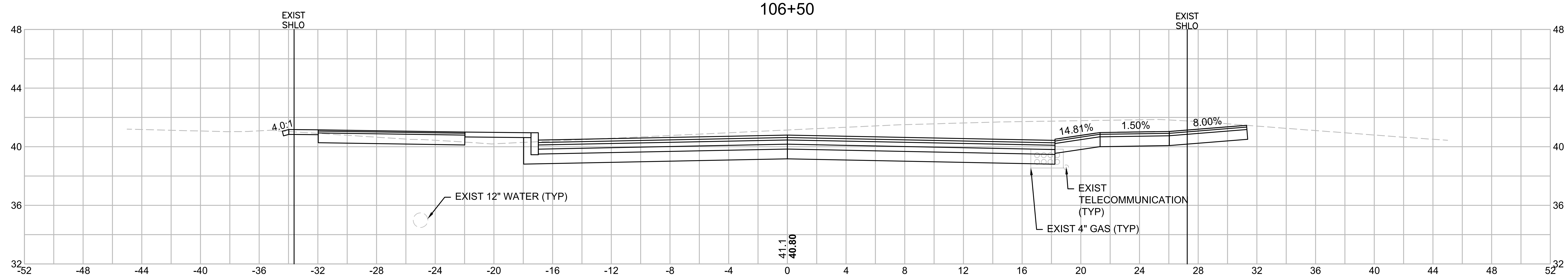
CUT: 101.64 SF
FILL: 0.85 SF

106+83



CUT: 42.84 SF
FILL: 0.00 SF

106+50



CUT: 102.89 SF
FILL: 1.61 SF

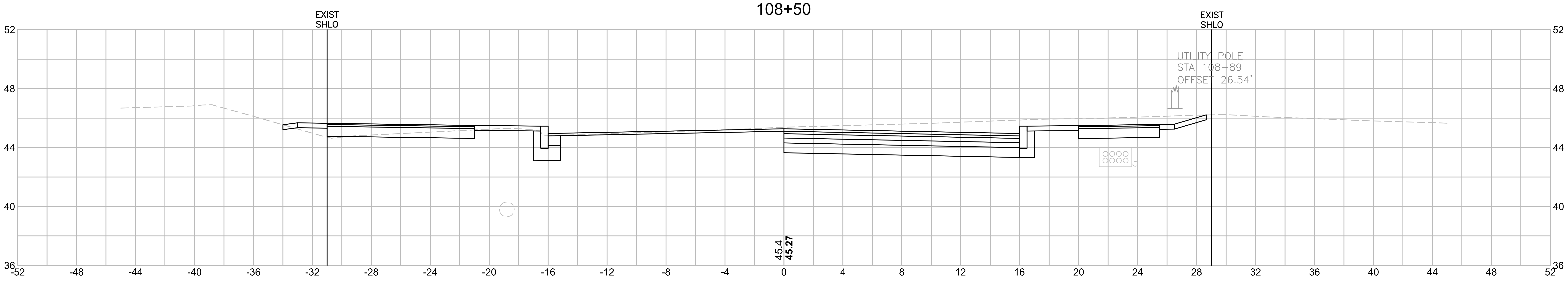
4 0 4 8
SCALE IN FEET

CHATHAM
MAIN STREET (ROUTE 28) FROM GEORGE RYDER ROAD TO BARN HILL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	87	109
PROJECT FILE NO.	606596		

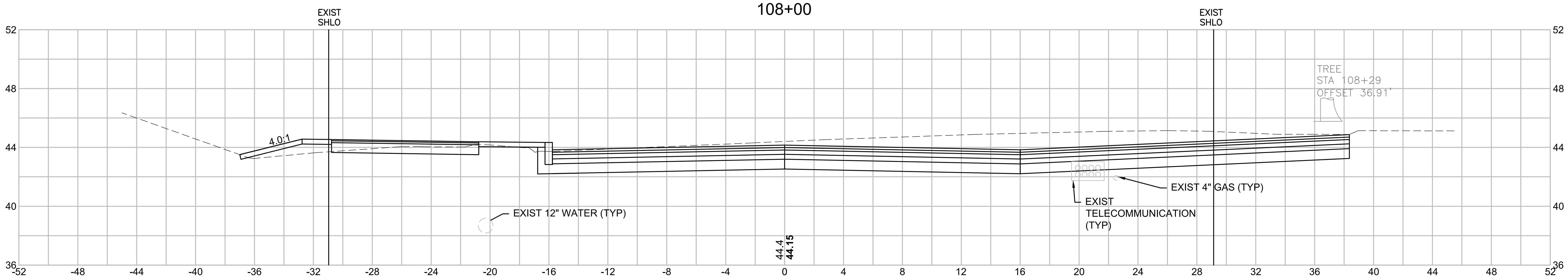
CROSS SECTIONS
MAIN STREET

108+50



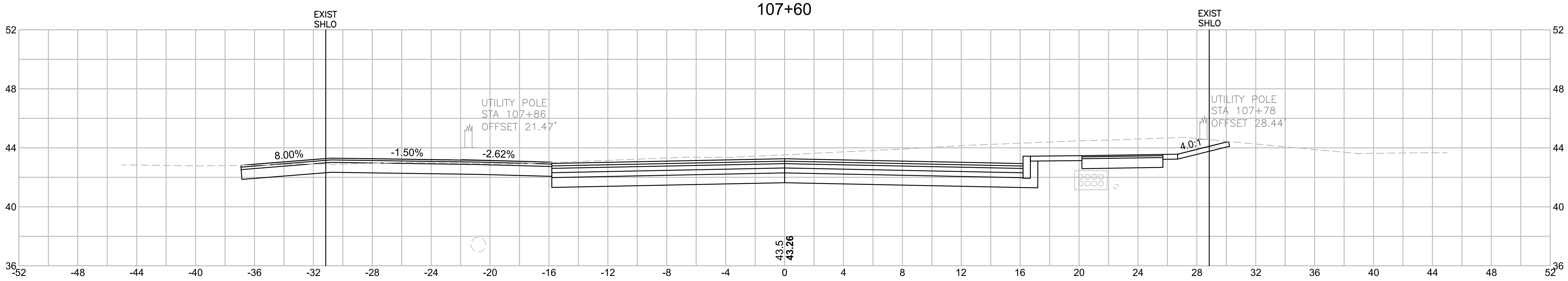
CUT: 55.15 SF
FILL: 0.73 SF

108+00



CUT: 120.71 SF
FILL: 2.76 SF

107+60



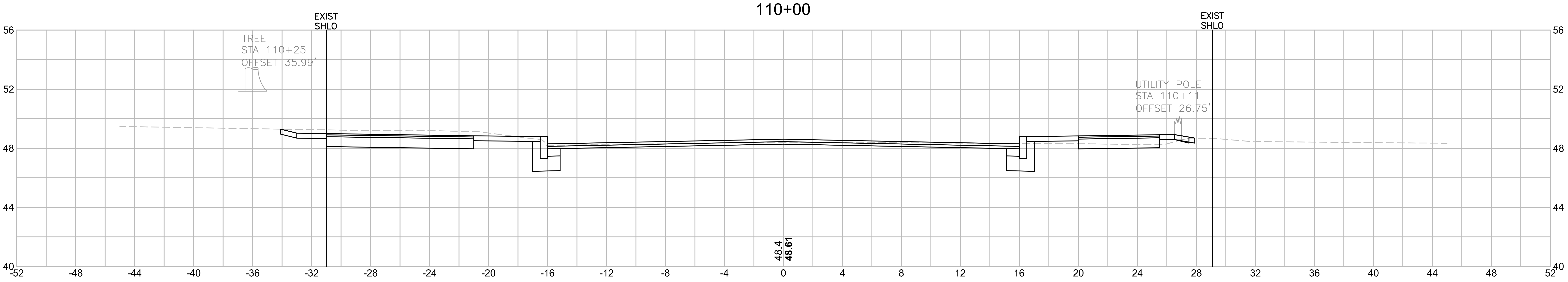
CUT: 106.33 SF
FILL: 0.00 SF

SCALE IN FEET

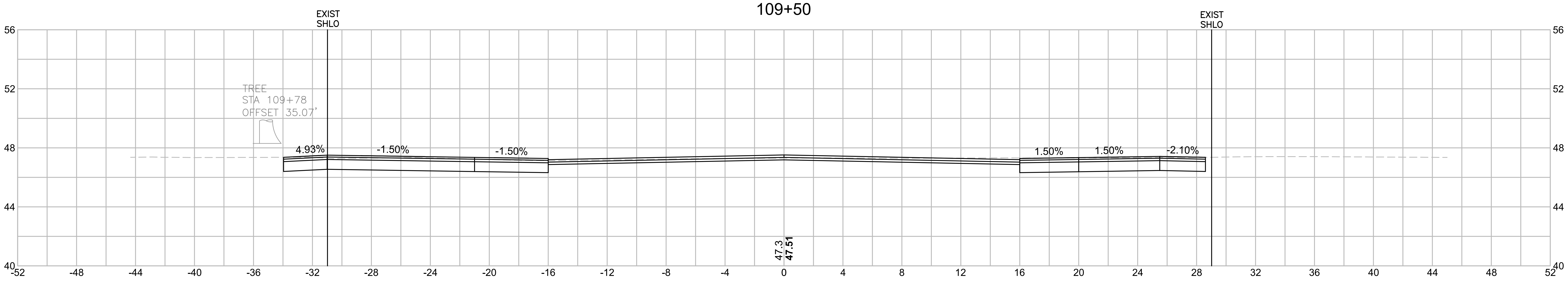
CHATHAM
MAIN STREET (ROUTE 28) FROM GEORGE RYDER ROAD TO BARN HILL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	88	109
PROJECT FILE NO.	606596		

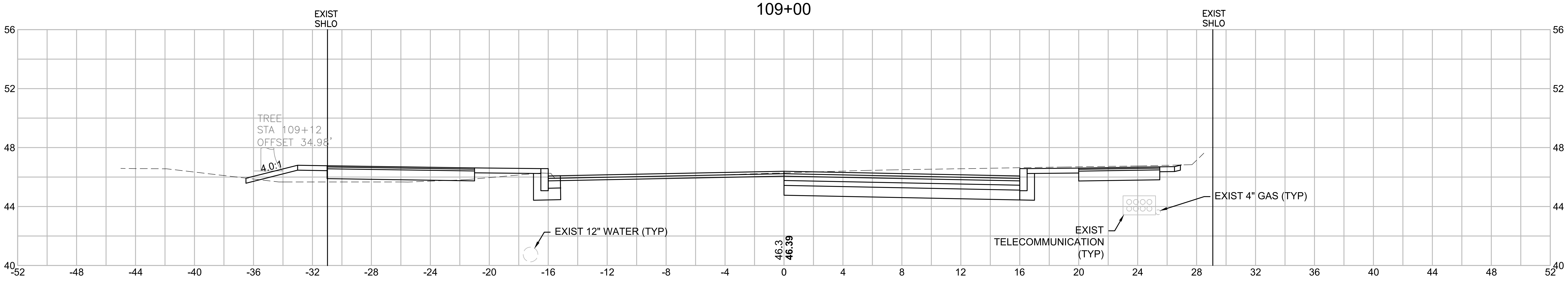
CROSS SECTIONS
MAIN STREET


110+00

CUT: 23.77 SF
FILL: 0.82 SF


109+50

CUT: 26.70 SF
FILL: 0.00 SF


109+00

CUT: 42.78 SF
FILL: 4.17 SF

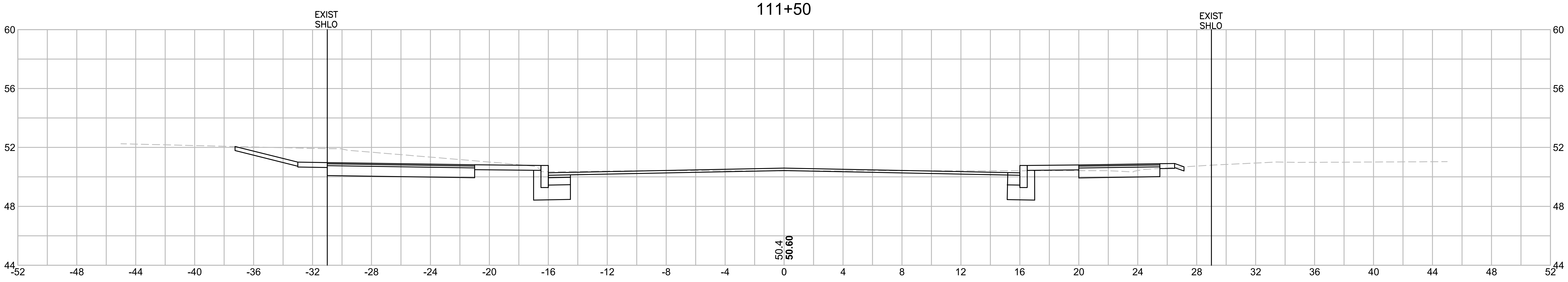
CHATHAM
MAIN STREET (ROUTE 28) FROM
GEORGE RYDER ROAD TO BARN HILL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	89	109
PROJECT FILE NO.	606596		

CROSS SECTIONS
MAIN STREET

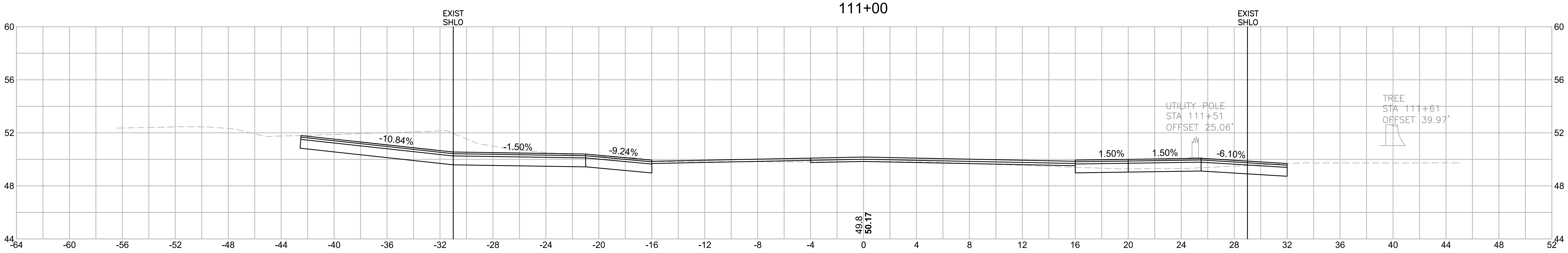
606596_HD(CROSS SECTIONS MAIN).DWG Plotted on 30-Mar-2018 2:20 PM

111+50



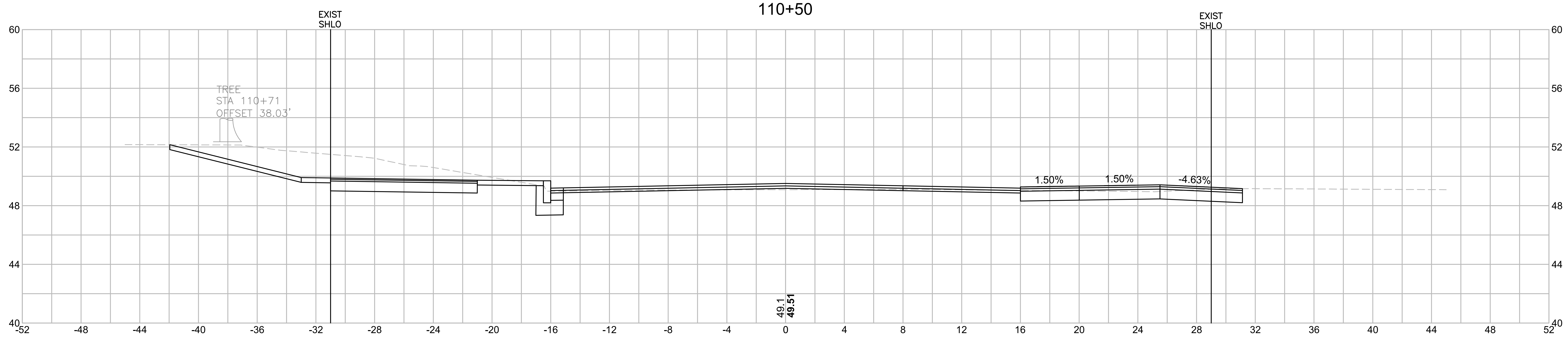
CUT: 34.64 SF
FILL: 0.13 SF

111+00



CUT: 43.12 SF
FILL: 0.00 SF

110+50



CUT: 48.39 SF
FILL: 0.00 SF

4 0 4 8
SCALE IN FEET

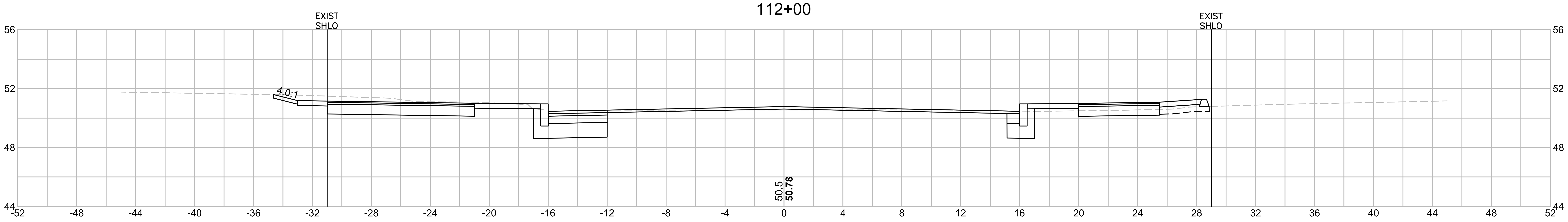
CHATHAM
MAIN STREET (ROUTE 28) FROM
GEORGE RYDER ROAD TO BARN HILL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	90	109
	PROJECT FILE NO.	606596	

CROSS SECTIONS
MAIN STREET

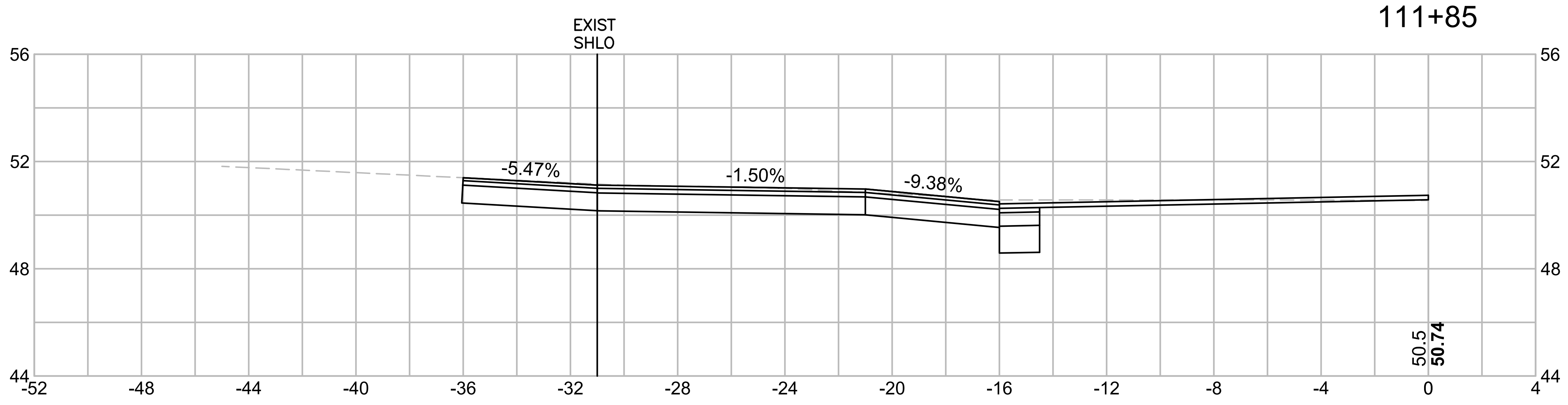
606596_HD(CROSS SECTIONS MAIN).DWG Plotted on 30-Mar-2018 2:20 PM

112+00



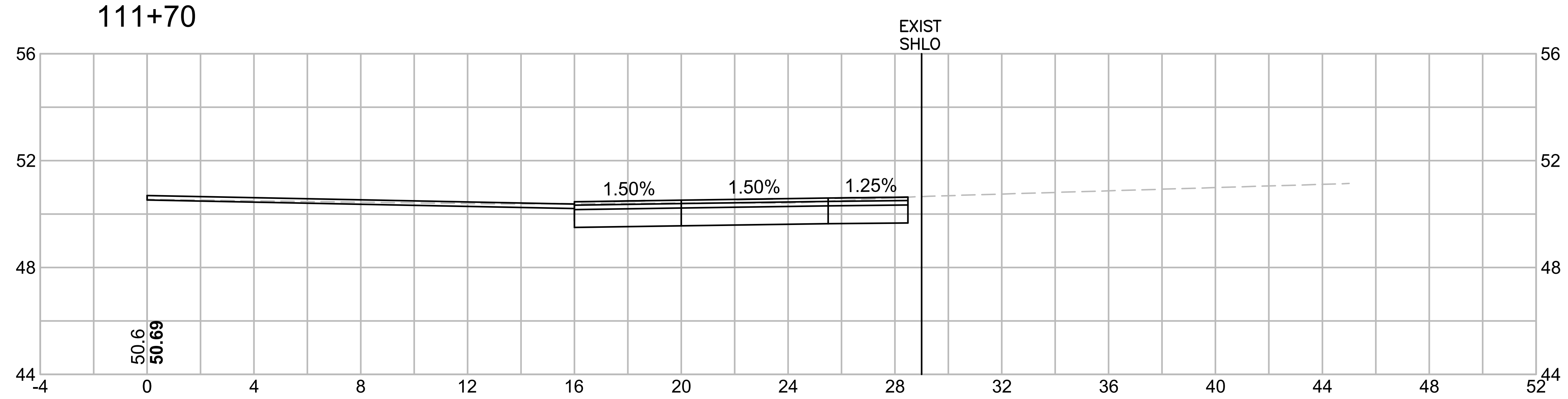
CUT: 30.07 SF
FILL: 0.52 SF

111+85



CUT: 24.07 SF
FILL: 0.00 SF

111+70



CUT: 10.89 SF
FILL: 0.00 SF

SCALE IN FEET

CHATHAM
MAIN STREET (ROUTE 28) FROM
GEORGE RYDER ROAD TO BARN HILL ROAD

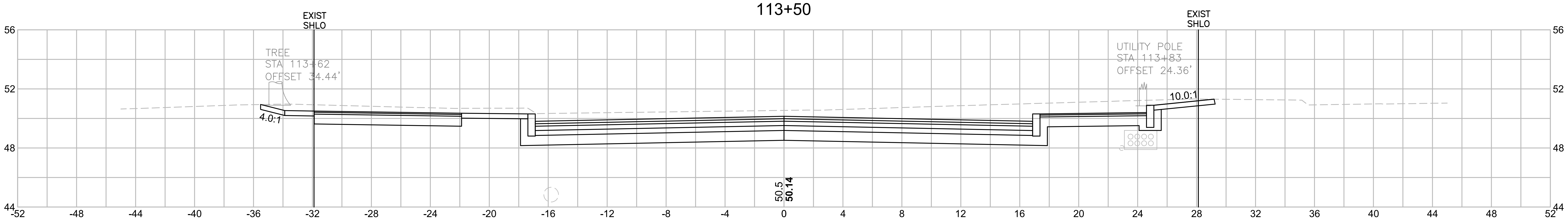
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	91	109
PROJECT FILE NO.	606596		

CROSS SECTIONS
MAIN STREET

Plotted on 30-Mar-2018 2:21 PM

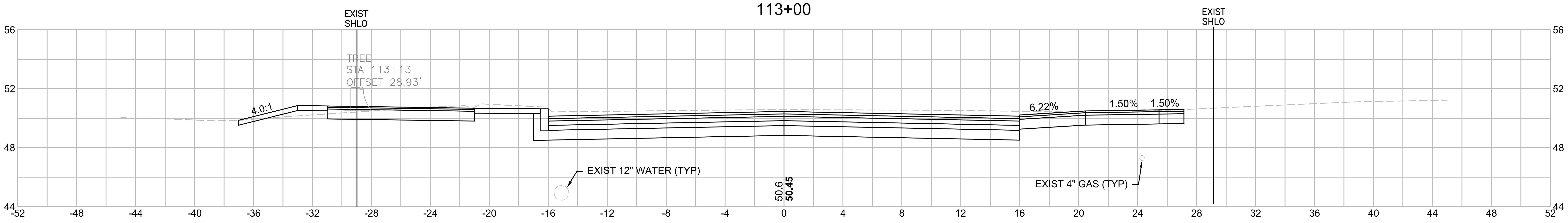
606596_HD(CROSS SECTIONS MAIN).DWG

113+50



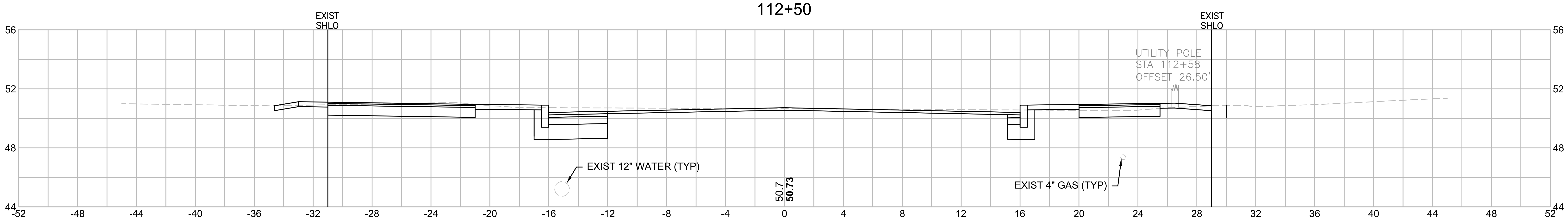
CUT: 113.66 SF
FILL: 0.00 SF

113+00



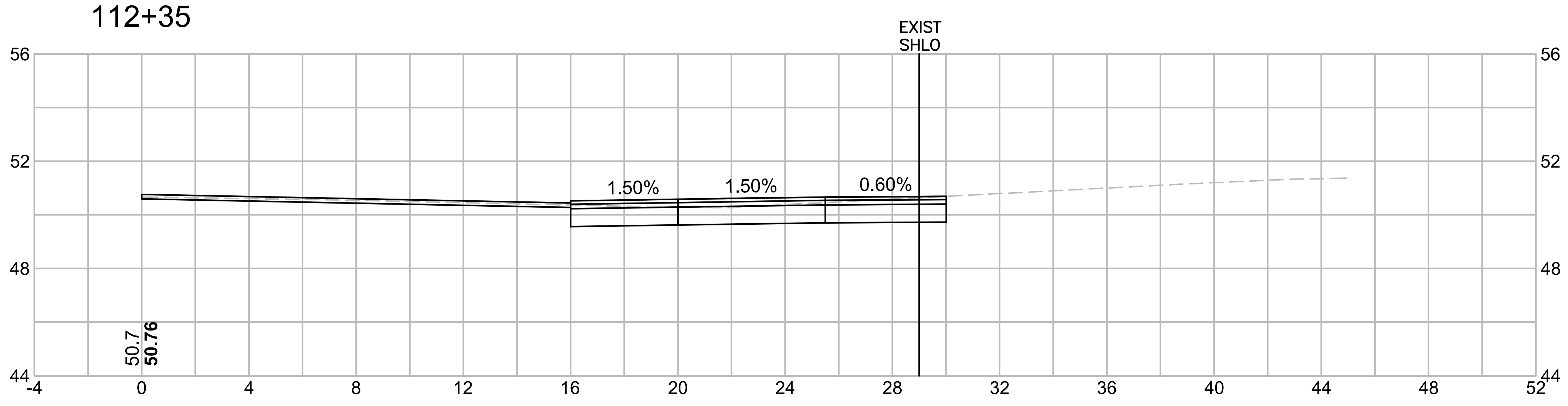
CUT: 82.01 SF
FILL: 0.95 SF

112+50



CUT: 27.39 SF
FILL: 0.10 SF

112+35



CUT: 10.48 SF
FILL: 0.00 SF

SCALE IN FEET

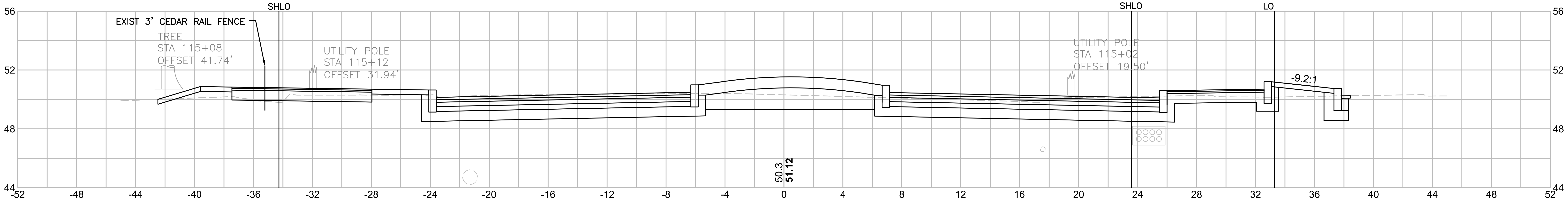
CHATHAM
MAIN STREET (ROUTE 28) FROM
GEORGE RYDER ROAD TO BARN HILL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	92	109
	PROJECT FILE NO.	606596	

CROSS SECTIONS
MAIN STREET

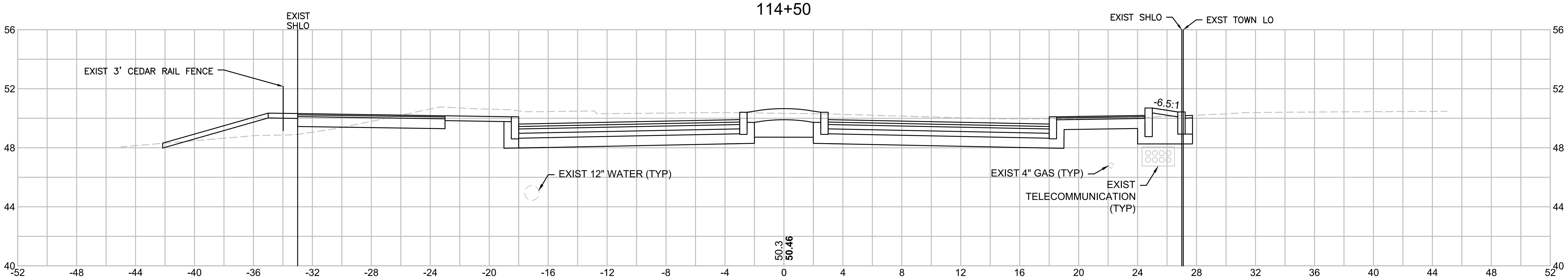
606596_HD(CROSS SECTIONS MAIN).DWG Plotted on 30-Mar-2018 2:21 PM

114+94.91



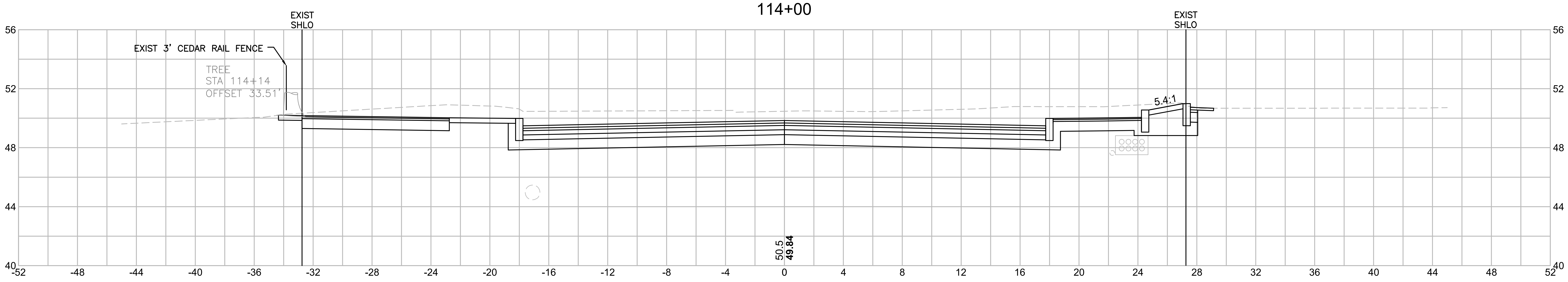
CUT: 80.56 SF
FILL: 2.71 SF

114+50



CUT: 100.11 SF
FILL: 6.09 SF

114+00



CUT: 131.01 SF
FILL: 0.00 SF

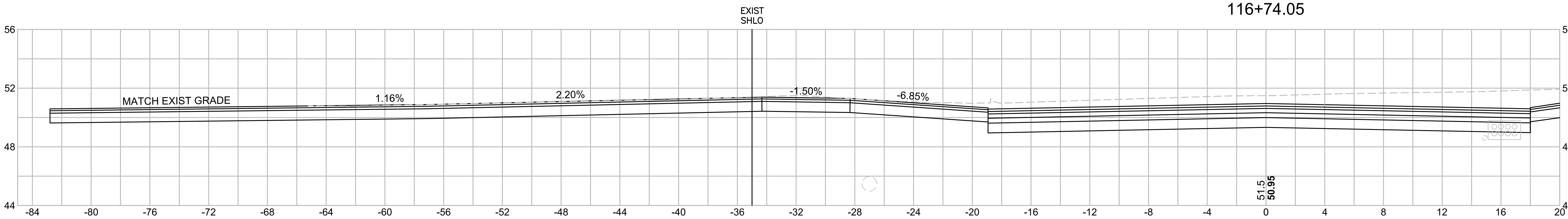
SCALE IN FEET

CHATHAM
MAIN STREET (ROUTE 28) FROM
GEORGE RYDER ROAD TO BARN HILL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	93	109
PROJECT FILE NO.	606596		

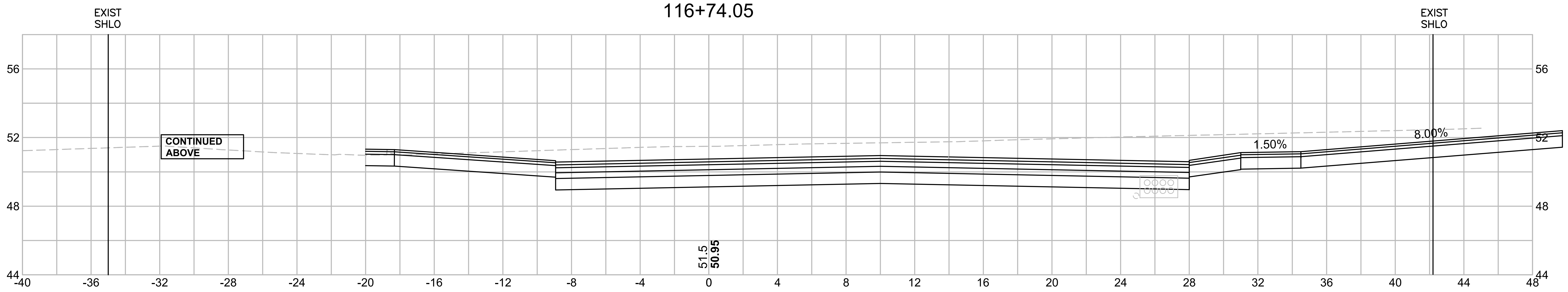
CROSS SECTIONS
MAIN STREET

116+74.05



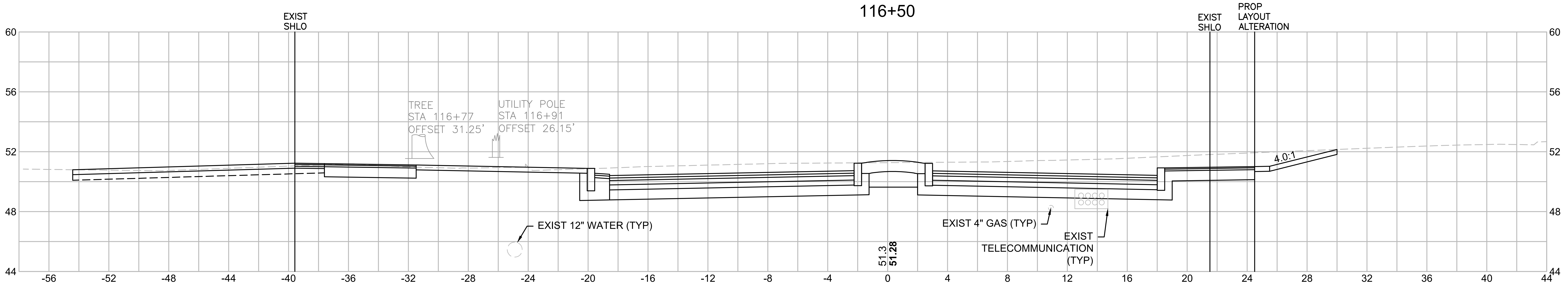
CONTINUED
BELOW

116+74.05



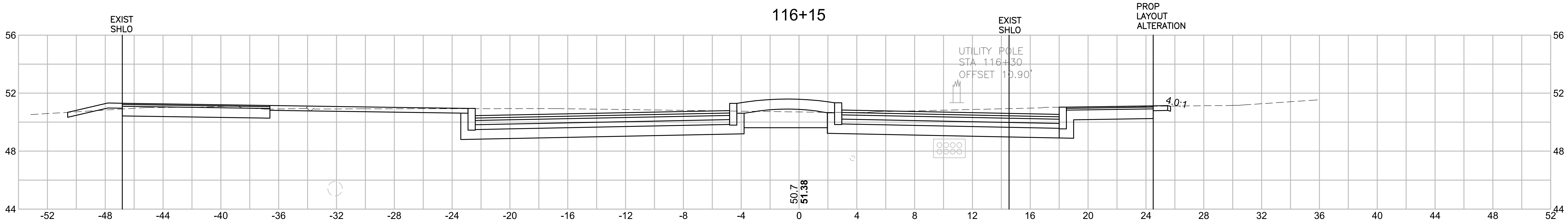
CUT: 283.28 SF
FILL: 0.00 SF

116+50



CUT: 120.28 SF
FILL: 0.00 SF

116+15



CUT: 88.49 SF
FILL: 0.14 SF

4 0 4 8
SCALE IN FEET

606596_HD(CROSS SECTIONS MAIN).DWG Plotted on 30-Mar-2018 2:21 PM

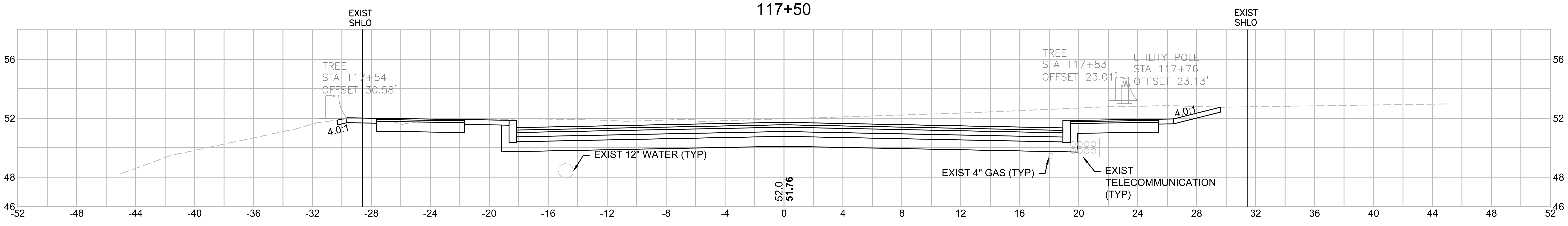
CHATHAM
MAIN STREET (ROUTE 28) FROM
GEORGE RYDER ROAD TO BARN HILL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	94	109
PROJECT FILE NO.	606596		

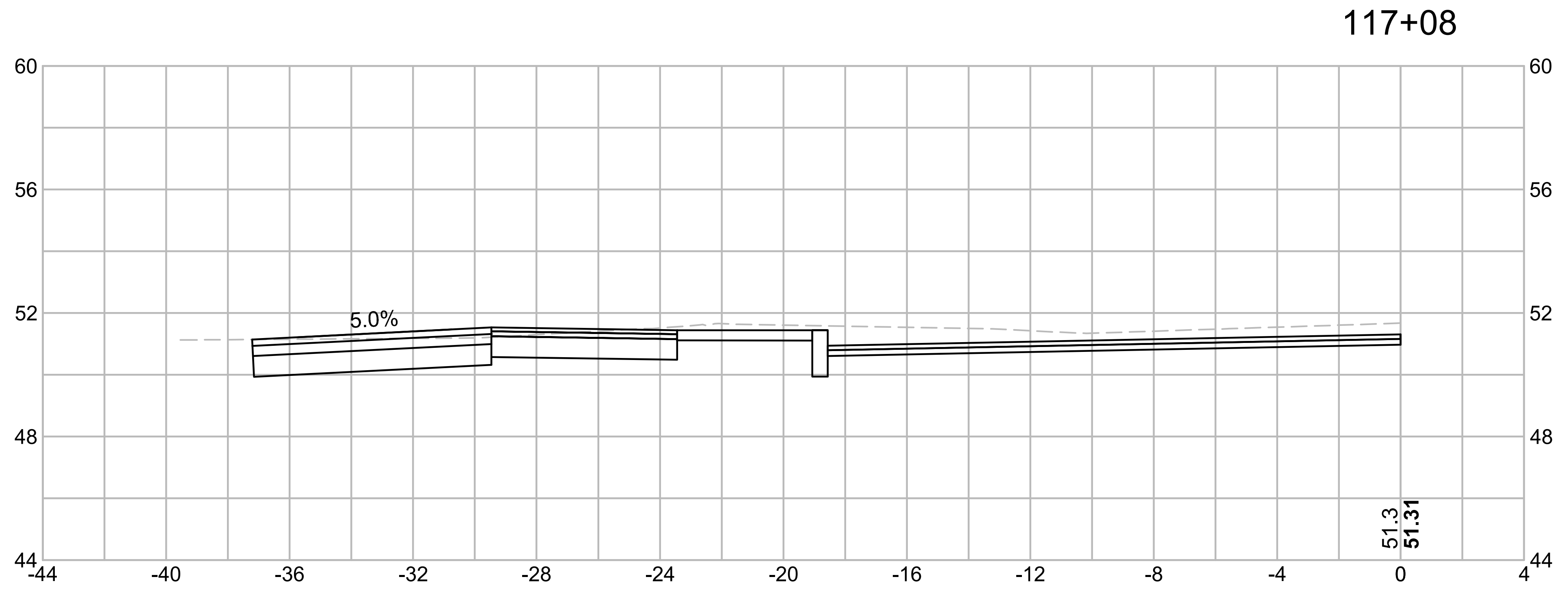
CROSS SECTIONS
MAIN STREET

Plotted on 30-Mar-2018 2:22 PM

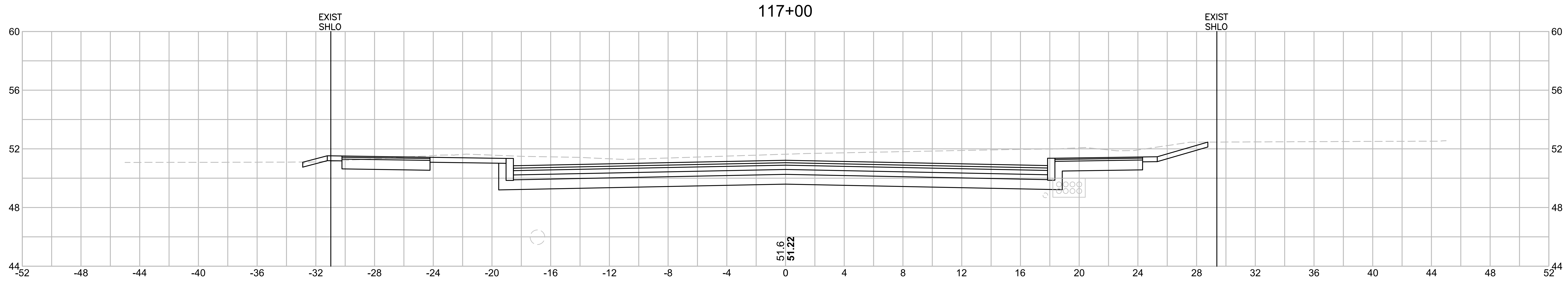
606596_HD(CROSS SECTIONS MAIN).DWG



CUT: 105.29 SF
FILL: 0.00 SF



CUT: 16.23 SF
FILL: 0.03 SF



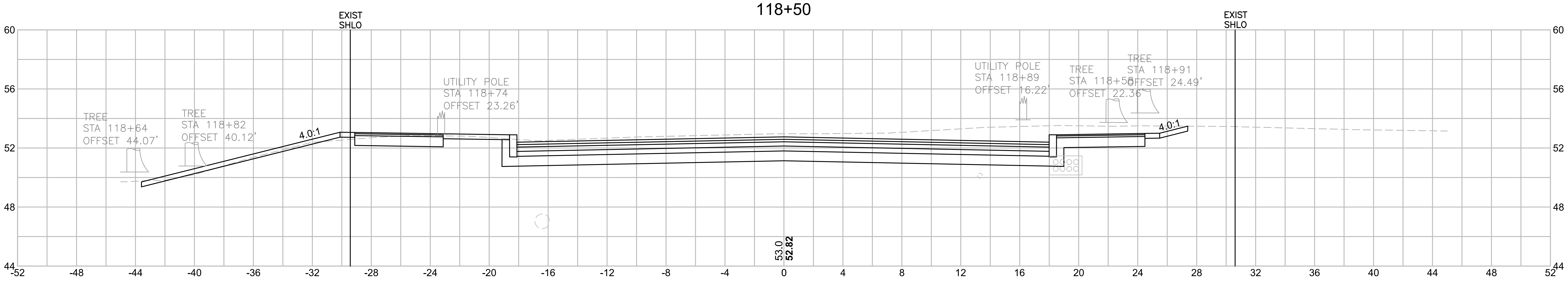
CUT: 104.49 SF
FILL: 0.03 SF

SCALE IN FEET

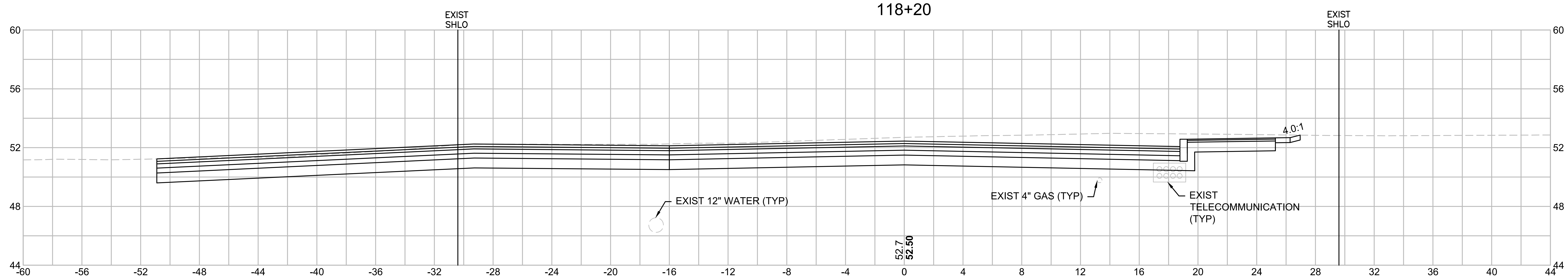
CHATHAM
MAIN STREET (ROUTE 28) FROM GEORGE RYDER ROAD TO BARN HILL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	95	109
PROJECT FILE NO.	606596		

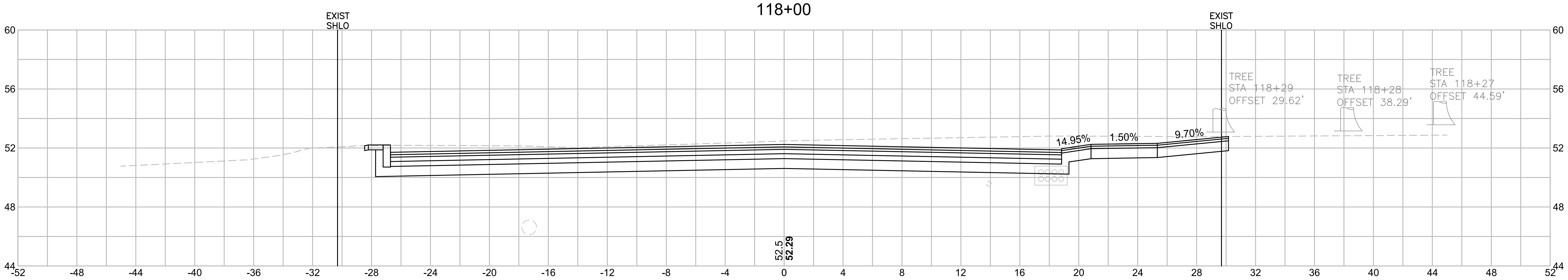
CROSS SECTIONS
MAIN STREET


118+50
EXIST SHLO
EXIST SHLO
TREE STA 118+64 OFFSET 44.07'
TREE STA 118+82 OFFSET 40.12'
UTILITY POLE STA 118+74 OFFSET 23.26'
UTILITY POLE STA 118+89 OFFSET 16.22'
TREE STA 118+58 OFFSET 22.36'
TREE STA 118+91 OFFSET 24.49'
4.0:1
4.0:1
53.0
52.82
60
56
52
48
44
-52
-48
-44
-40
-36
-32
-28
-24
-20
-16
-12
-8
-4
0
4
8
12
16
20
24
28
32
36
40
44
48
52

CUT: 92.42 SF
FILL: 0.37 SF



CUT: 133.98 SF
FILL: 0.00 SF



CUT: 109.64 SF
FILL: 0.00 SF

SCALE IN FEET

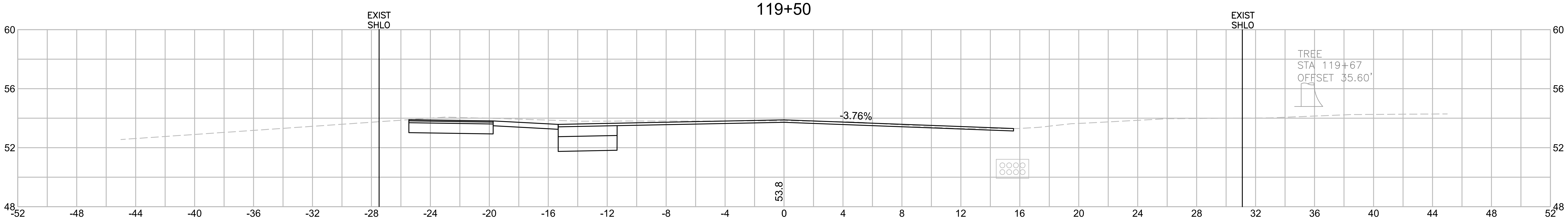
CHATHAM
MAIN STREET (ROUTE 28) FROM
GEORGE RYDER ROAD TO BARN HILL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	96	109
	PROJECT FILE NO.	606596	

CROSS SECTIONS
MAIN STREET

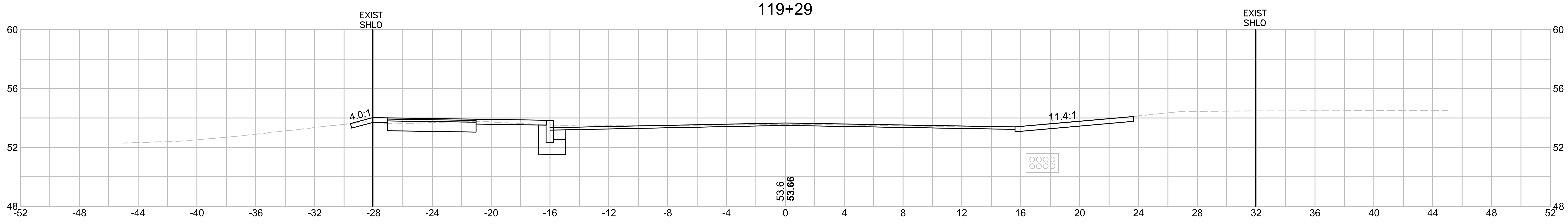
Plotted on 30-Mar-2018 2:22 PM

606596_HD(CROSS SECTIONS MAIN).DWG



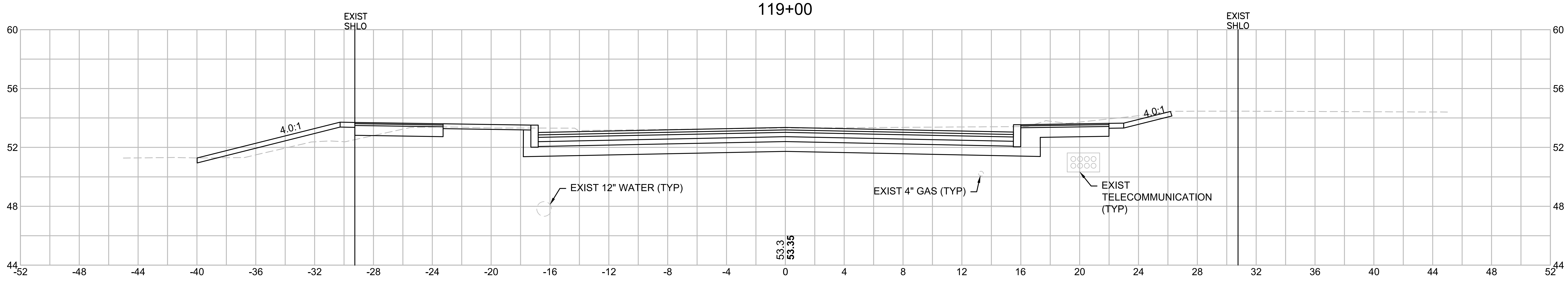
119+50

CUT: 16.44 SF
FILL: 0.00 SF



119+29

CUT: 8.13 SF
FILL: 0.02 SF



119+00

CUT: 72.20 SF
FILL: 5.04 SF

SCALE IN FEET

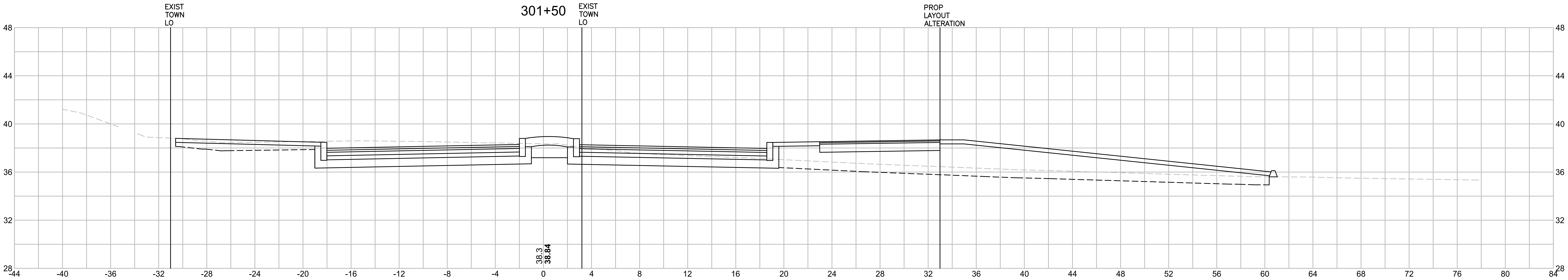
CHATHAM
MAIN STREET (ROUTE 28) FROM
GEORGE RYDER ROAD TO BARN HILL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	97	109
PROJECT FILE NO.	606596		

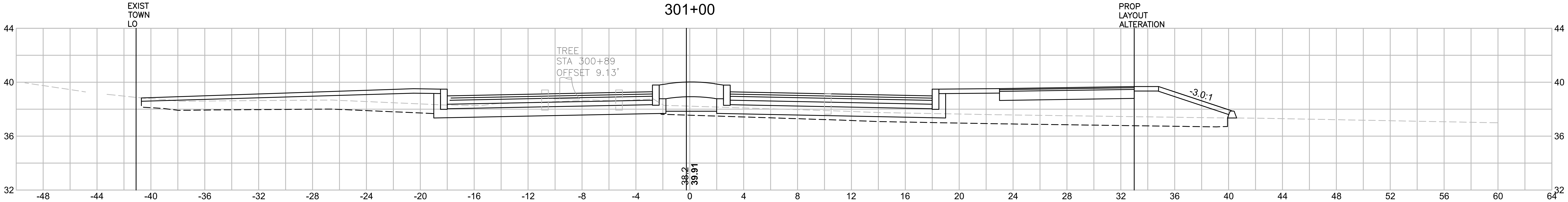
CROSS SECTIONS
GEORGE RYDER ROAD

Plotted on 30-Mar-2018 2:23 PM

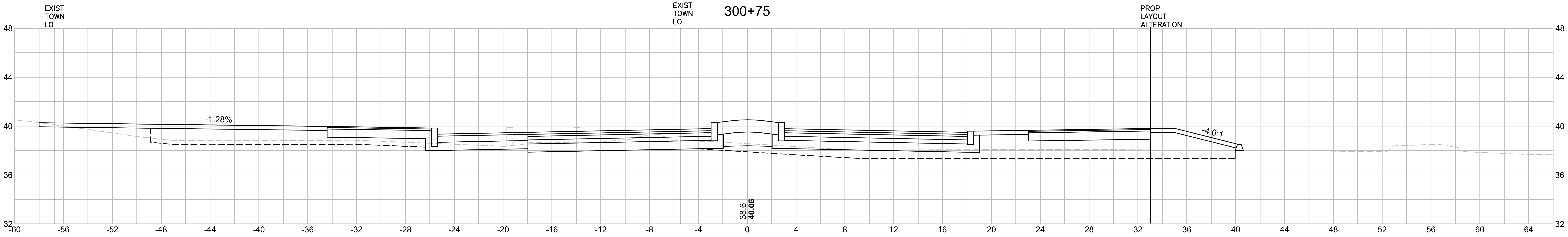
606596_HD(CROSS SECTIONS GEORGE RYDER).DWG



CUT: 94.56 SF
FILL: 71.45 SF



CUT: 59.35 SF
FILL: 65.84 SF



CUT: 67.48 SF
FILL: 79.39 SF

4 0 4 8
SCALE IN FEET

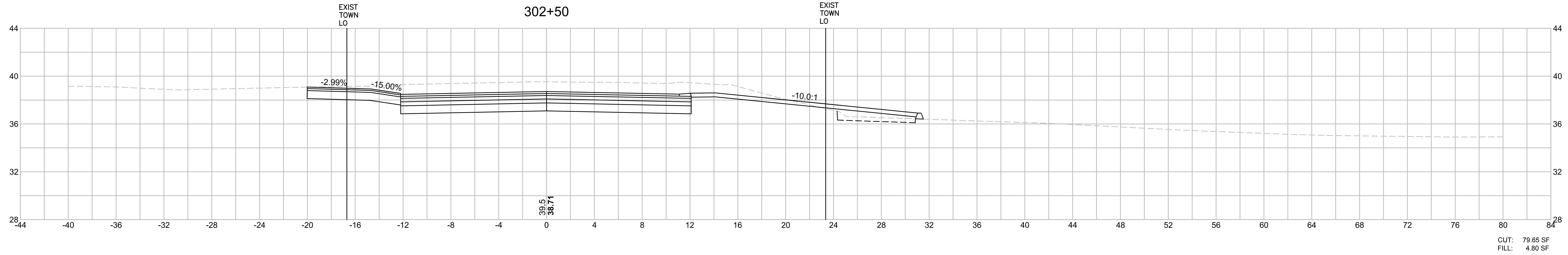
CHATHAM
MAIN STREET (ROUTE 28) FROM
GEORGE RYDER ROAD TO BARN HILL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	98	109
PROJECT FILE NO.	606596		

CROSS SECTIONS
GEORGE RYDER ROAD

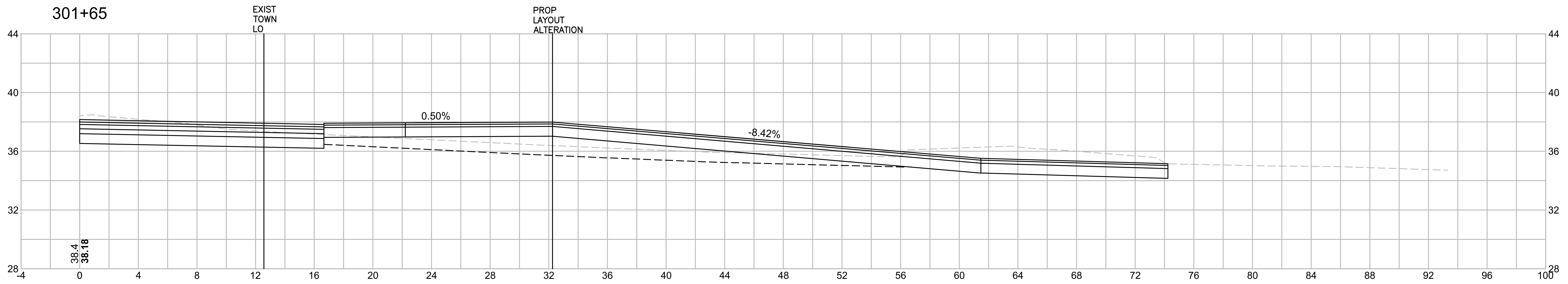
Plotted on 30-Mar-2018 2:23 PM

606596_HD(CROSS SECTIONS GEORGE RYDER).DWG



CUT: 79.65 SF
FILL: 4.80 SF

CUT: 103.02 SF
FILL: 31.99 SF



CUT: 77.94 SF
FILL: 30.54 SF

CHATHAM
MAIN STREET (ROUTE 28) FROM
GEORGE RYDER ROAD TO BARN HILL ROAD

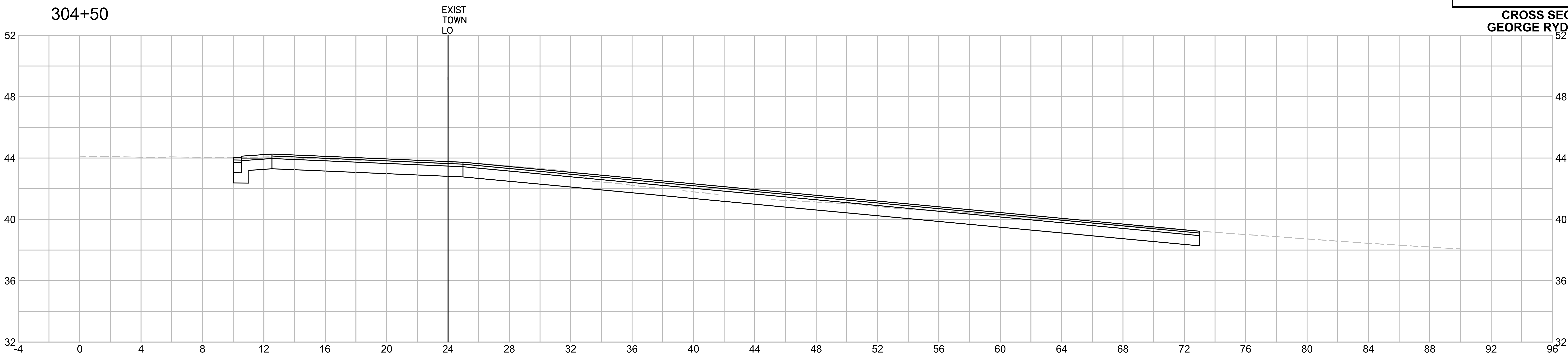
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	99	109
PROJECT FILE NO.	606596		

CROSS SECTIONS
GEORGE RYDER ROAD

Plotted on 30-Mar-2018 2:23 PM

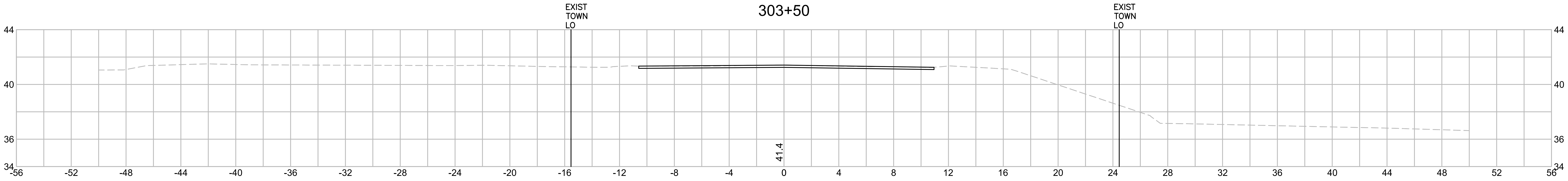
606596_HD(CROSS SECTIONS GEORGE RYDER).DWG

304+50



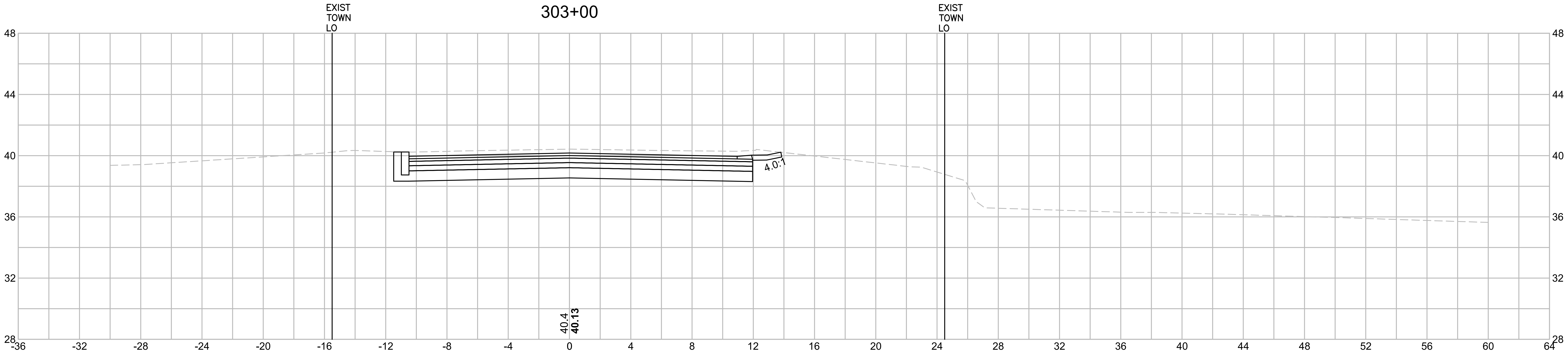
CUT: 46.88 SF
FILL: 0.00 SF

303+50



CUT: 0.00 SF
FILL: 0.00 SF

303+00



CUT: 45.70 SF
FILL: 0.00 SF

4 0 4 8

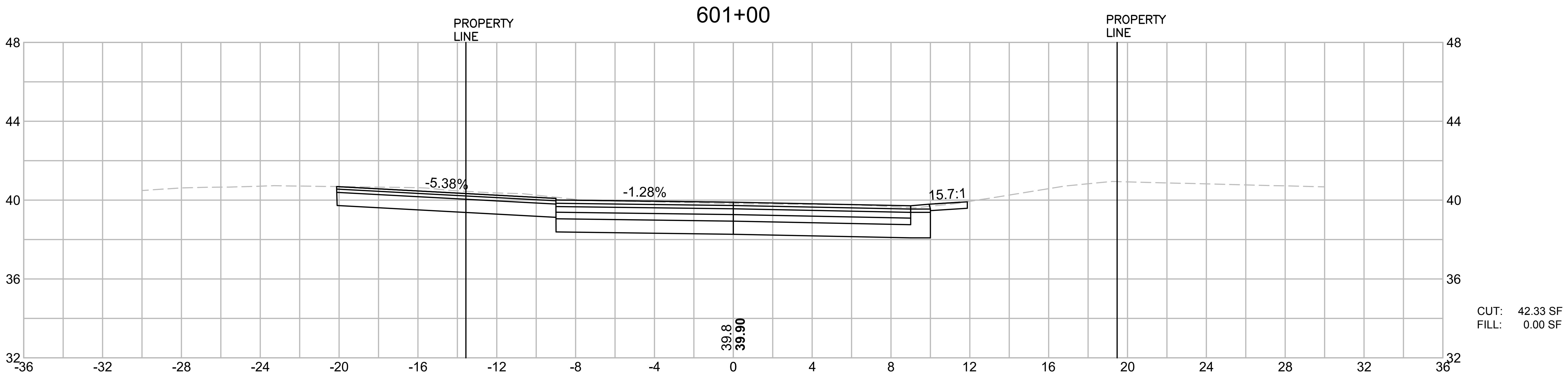
SCALE IN FEET

CHATHAM
MAIN STREET (ROUTE 28) FROM
GEORGE RYDER ROAD TO BARN HILL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	100	109
PROJECT FILE NO.	606596		

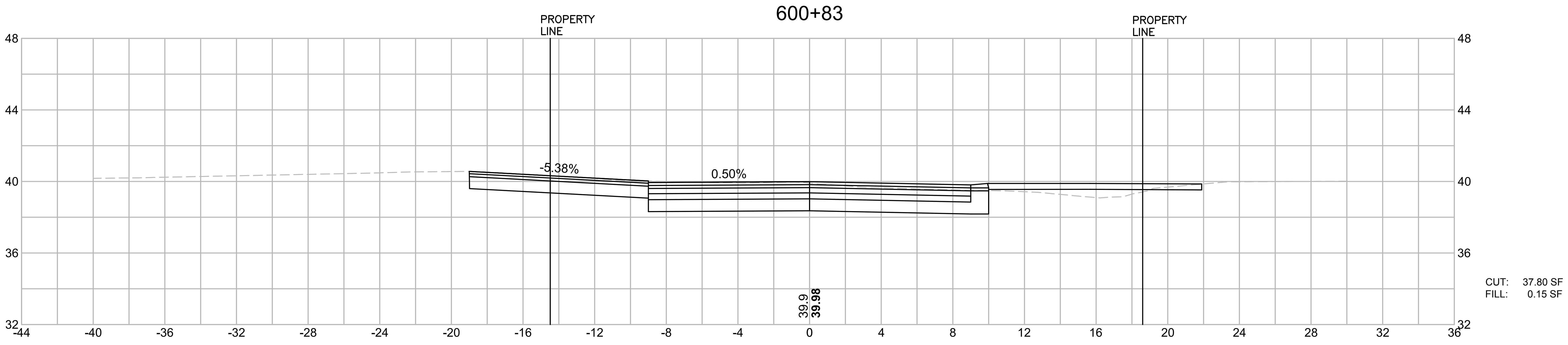
CROSS SECTIONS
GEORGE RYDER ROAD SOUTH

601+00



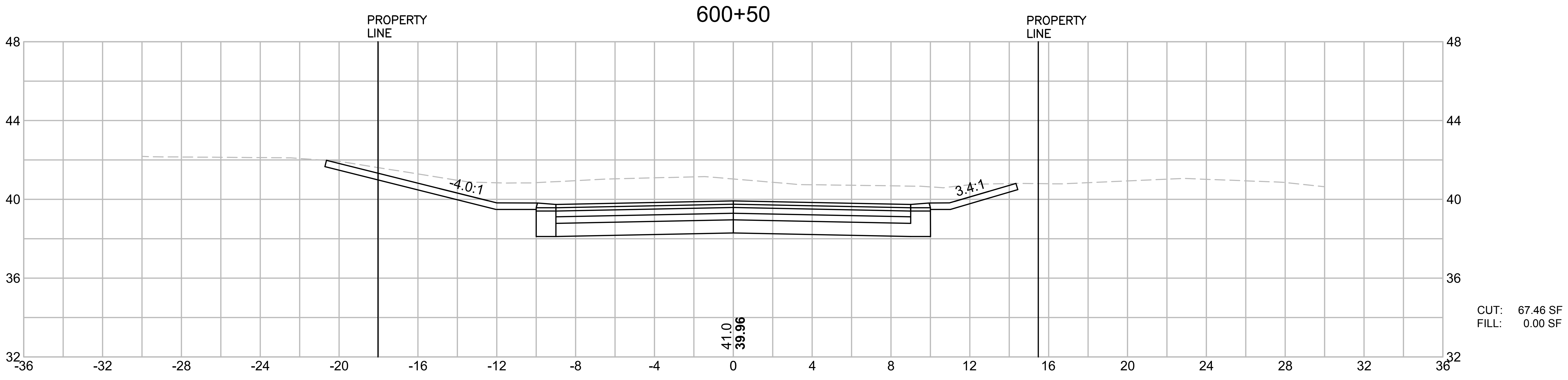
CUT: 42.33 SF
FILL: 0.00 SF

600+83



CUT: 37.80 SF
FILL: 0.15 SF

600+50



CUT: 67.46 SF
FILL: 0.00 SF

SCALE IN FEET

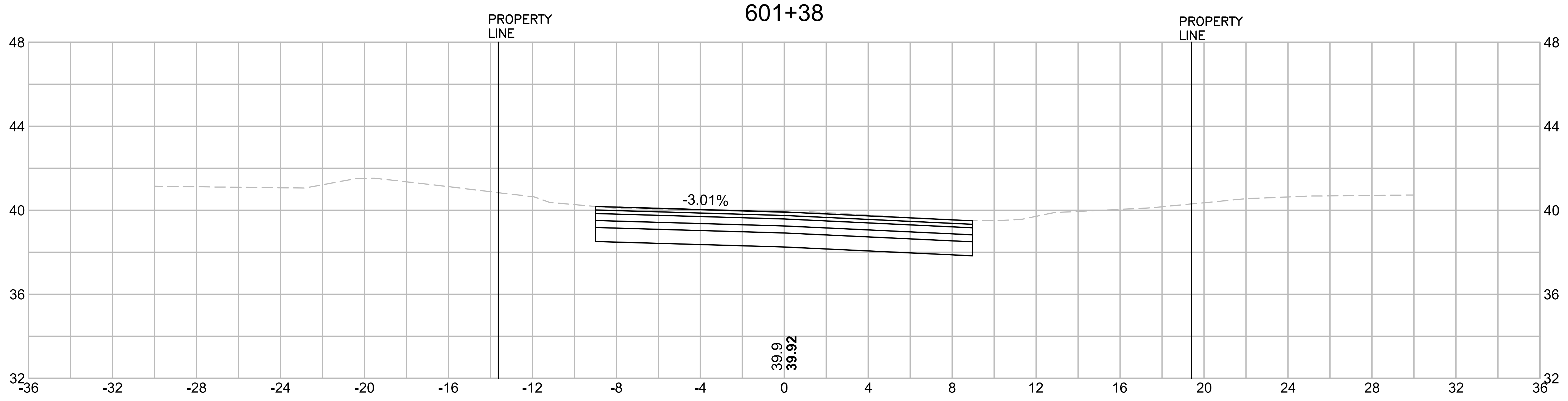
CHATHAM
MAIN STREET (ROUTE 28) FROM
GEORGE RYDER ROAD TO BARN HILL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	101	109
PROJECT FILE NO.	606596		

CROSS SECTIONS
GEORGE RYDER ROAD SOUTH

606596_HD(CROSS SECTIONS GEORGE RYDER).DWG Plotted on 30-Mar-2018 2:24 PM

601+38



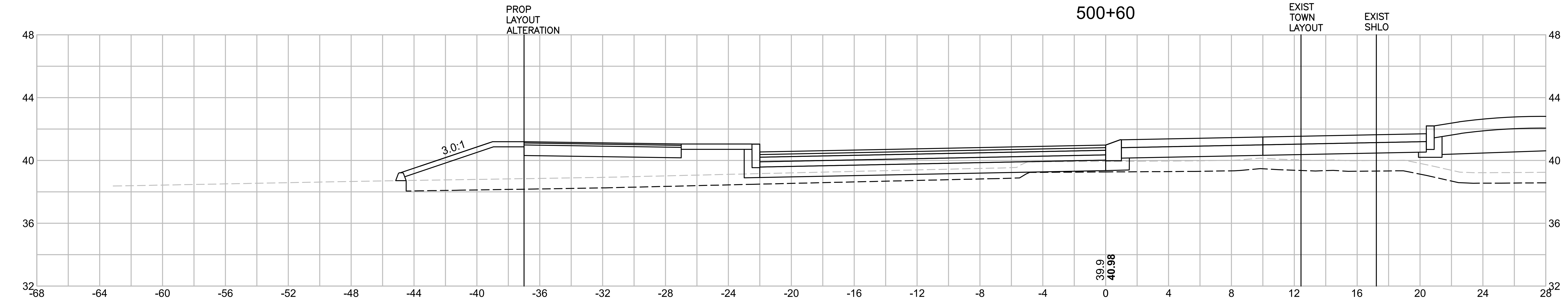
CUT: 29.92 SF
FILL: 0.00 SF

SCALE IN FEET

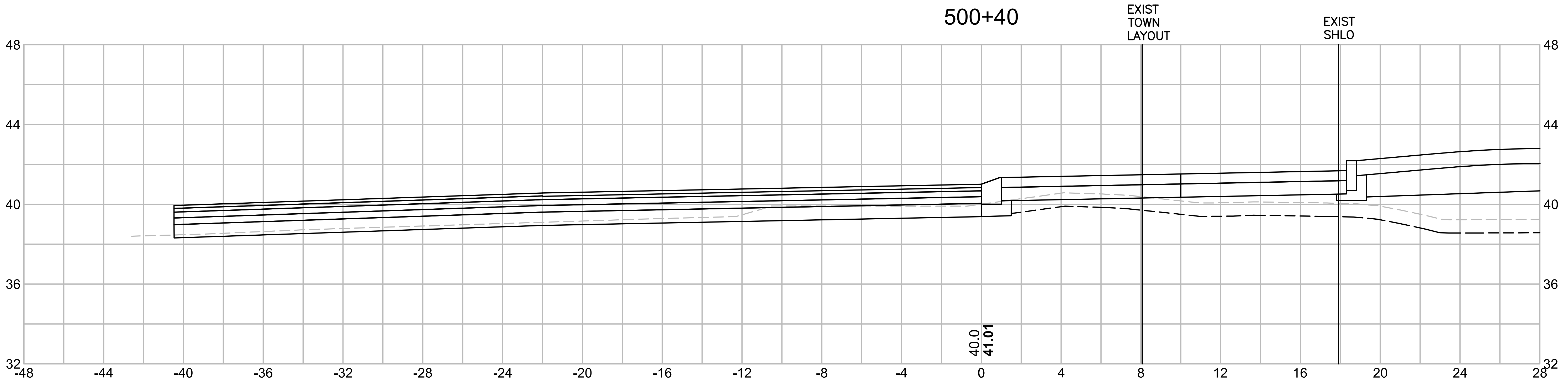
CHATHAM
MAIN STREET (ROUTE 28) FROM
GEORGE RYDER ROAD TO BARN HILL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	102	109
	PROJECT FILE NO.	606596	

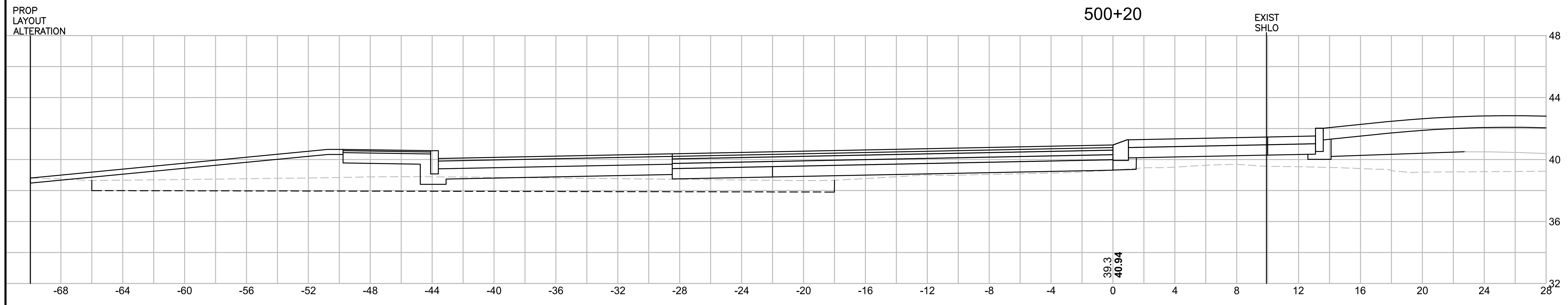
CROSS SECTIONS
GEORGE RYDER ROUNDABOUT



CUT: 50.30 SF
FILL: 80.64 SF



CUT: 31.66 SF
FILL: 29.56 SF



CUT: 39.34 SF
FILL: 84.70 SF

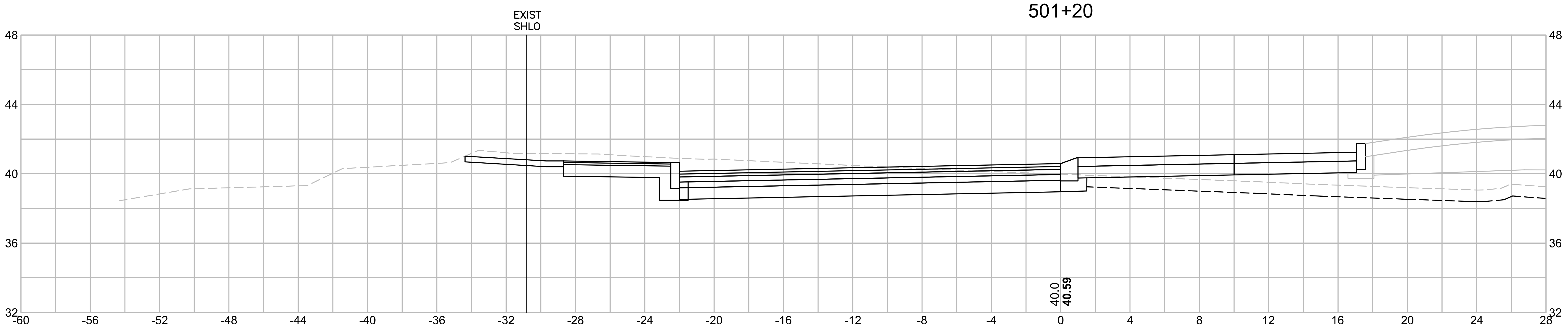
CHATHAM
MAIN STREET (ROUTE 28) FROM GEORGE RYDER ROAD TO BARN HILL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	103	109
PROJECT FILE NO.	606596		

CROSS SECTIONS
GEORGE RYDER ROUNDABOUT

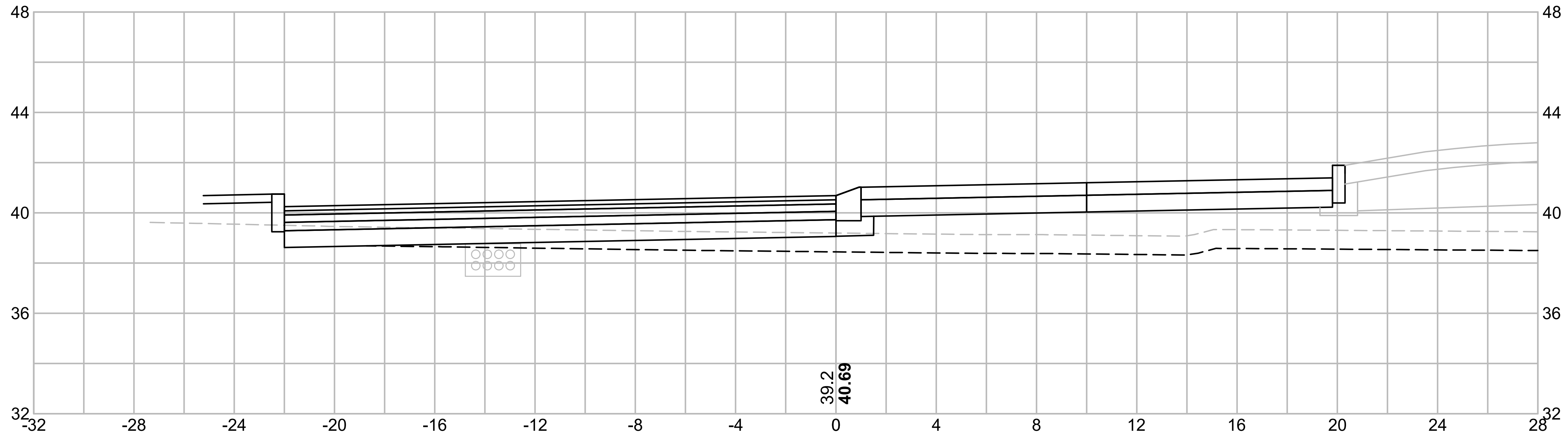
606596_HD(CROSS SECTIONS GEORGE RYDER).DWG   Plotted on 30-Mar-2018 2:24 PM

501+20



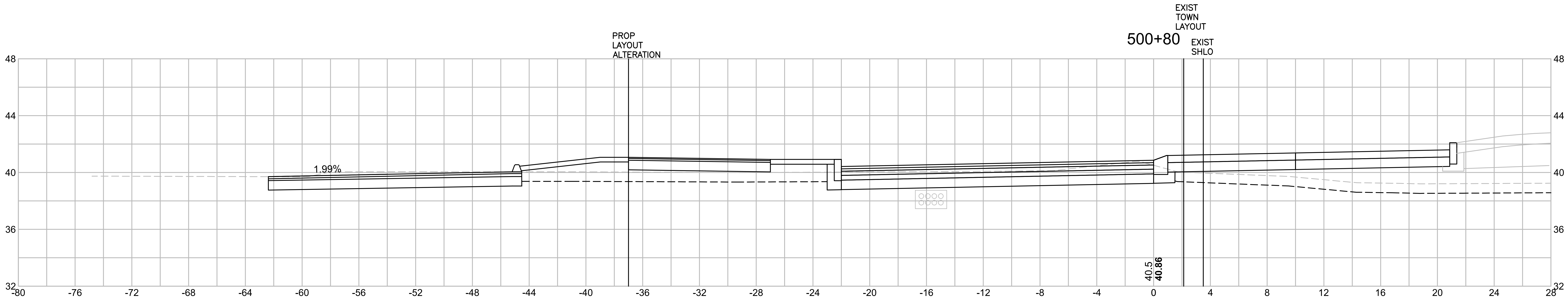
CUT: 72.51 SF
FILL: 31.59 SF

501+00



CUT: 34.16 SF
FILL: 45.74 SF

500+80



CUT: 80.08 SF
FILL: 56.46 SF

SCALE IN FEET

CHATHAM
MAIN STREET (ROUTE 28) FROM GEORGE RYDER ROAD TO BARN HILL ROAD

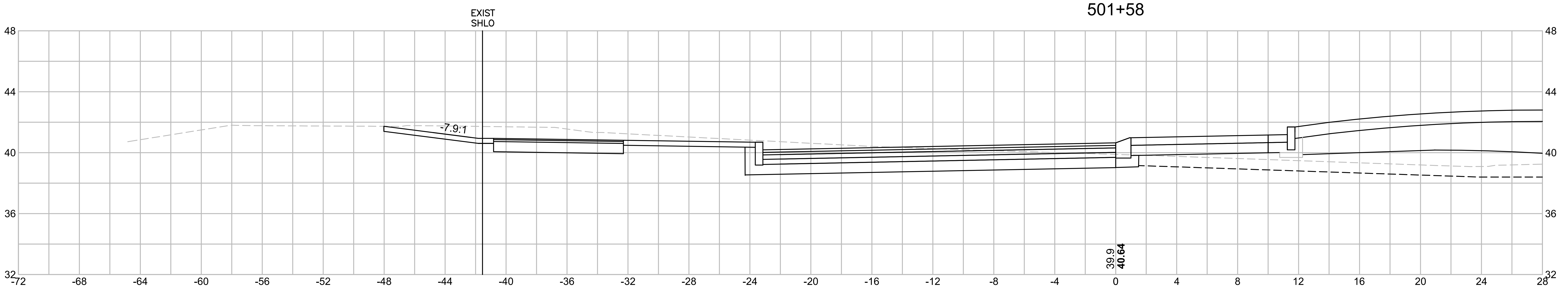
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	104	109
PROJECT FILE NO.	606596		

CROSS SECTIONS
GEORGE RYDER ROUNDABOUT

Plotted on 30-Mar-2018 2:25 PM

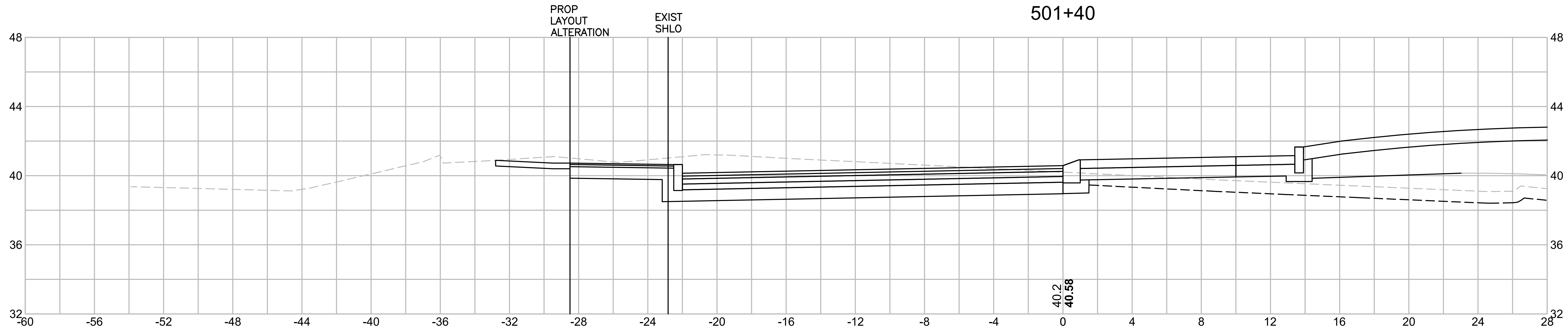
606596_HD(CROSS SECTIONS GEORGE RYDER).DWG

501+58



CUT: 82.81 SF
FILL: 36.14 SF

501+40

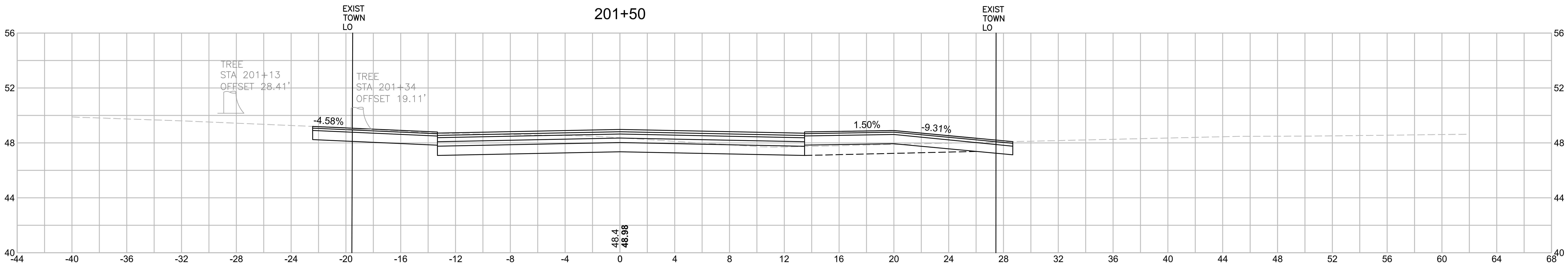


CUT: 77.13 SF
FILL: 28.21 SF

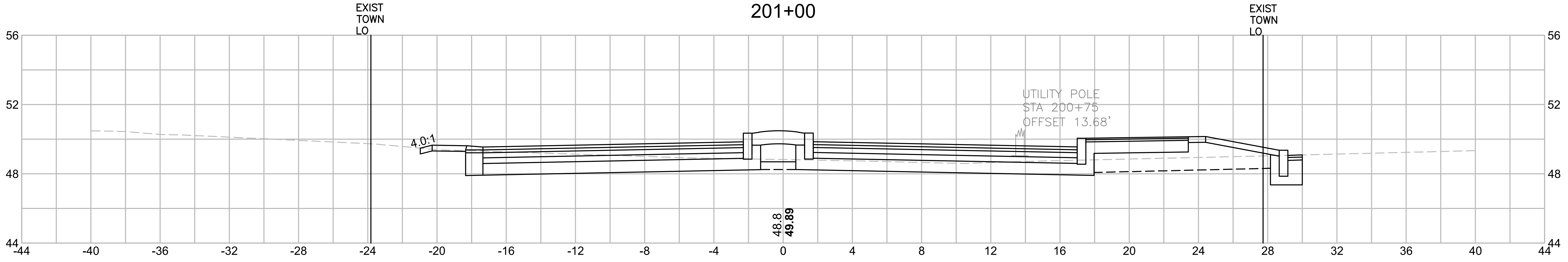
CHATHAM
MAIN STREET (ROUTE 28) FROM GEORGE RYDER ROAD TO BARN HILL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	105	109
PROJECT FILE NO.	606596		

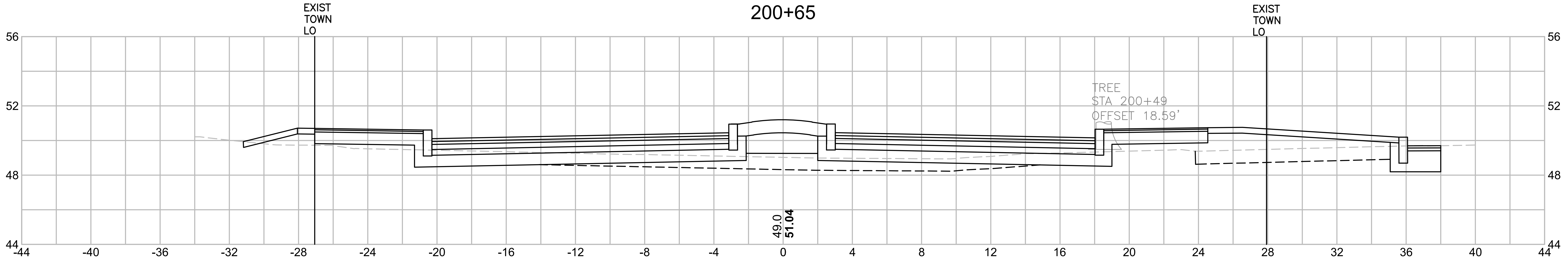
CROSS SECTIONS
BARN HILL ROAD



CUT: 46.81 SF
FILL: 6.86 SF



CUT: 39.60 SF
FILL: 12.45 SF



CUT: 43.42 SF
FILL: 32.97 SF

SCALE IN FEET

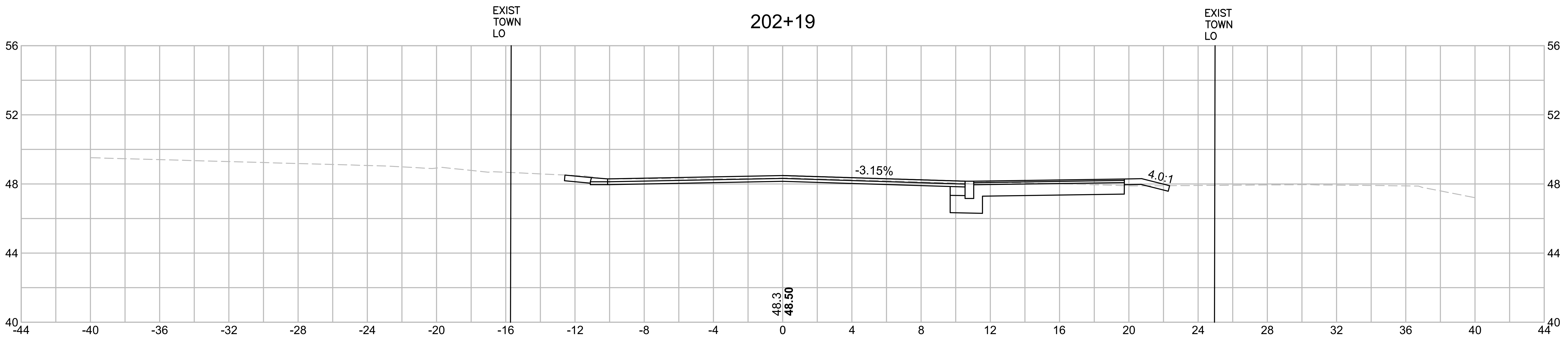
606596_HD(CROSS SECTIONS BARN HILL).DWG Plotted on 30-Mar-2018 2:25 PM

CHATHAM
MAIN STREET (ROUTE 28) FROM
GEORGE RYDER ROAD TO BARN HILL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	106	109
PROJECT FILE NO.	606596		

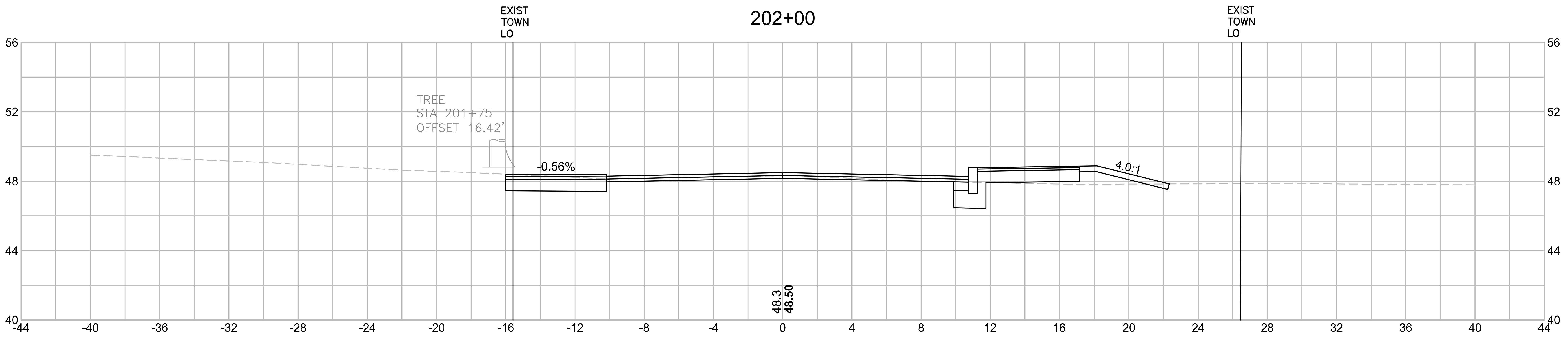
CROSS SECTIONS
BARN HILL ROAD

202+19



CUT: 8.72 SF
FILL: 1.39 SF

202+00



CUT: 7.96 SF
FILL: 1.83 SF

4 0 4 8
SCALE IN FEET

606596_HD(CROSS SECTIONS BARN HILL).DWG Plotted on 30-Mar-2018 2:25 PM

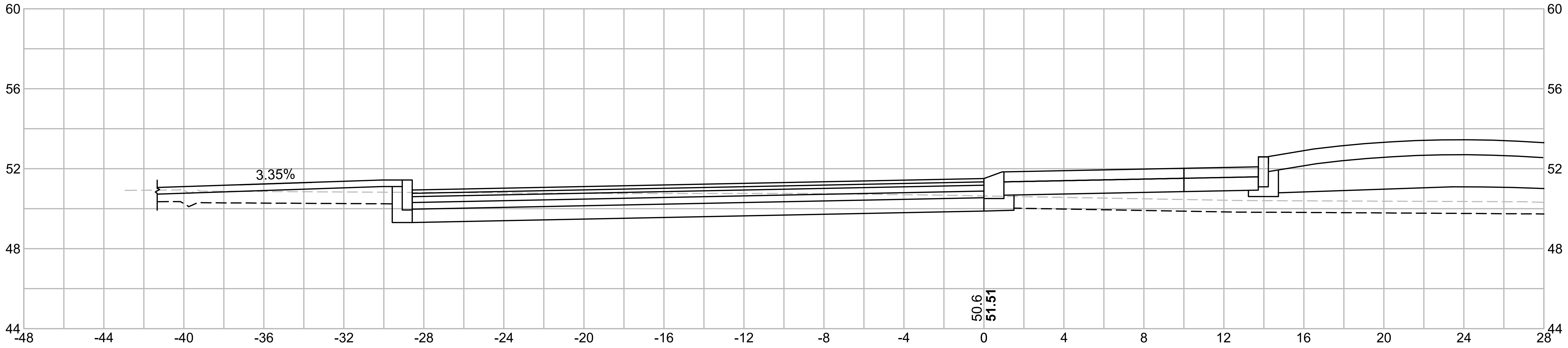
CHATHAM
MAIN STREET (ROUTE 28) FROM GEORGE RYDER ROAD TO BARN HILL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	107	109
PROJECT FILE NO.	606596		

CROSS SECTIONS
BARN HILL ROUNDABOUT

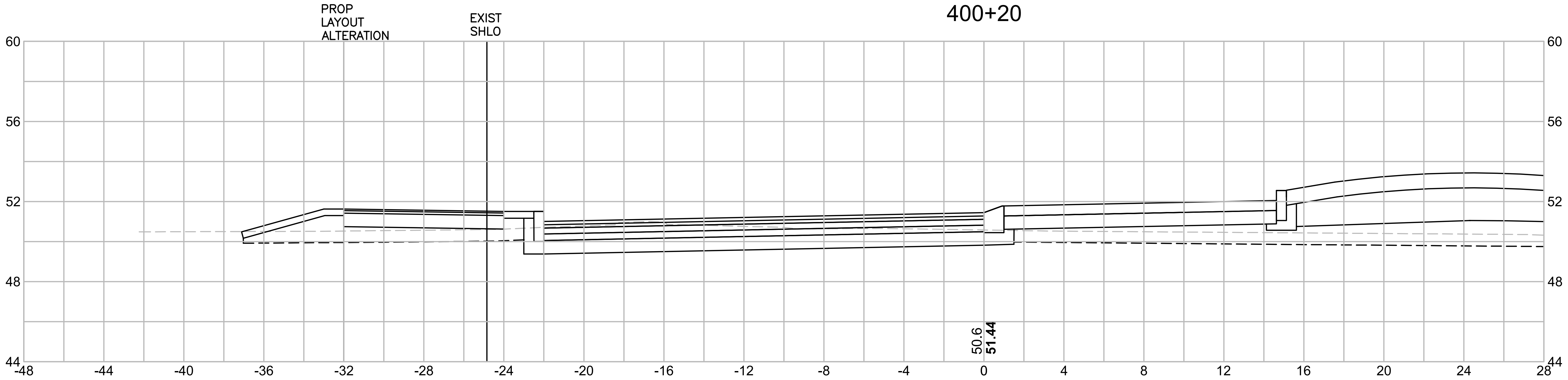
606596_HD(CROSS SECTIONS BARN HILL).DWG   Plotted on 30-Mar-2018 2:26 PM

400+40



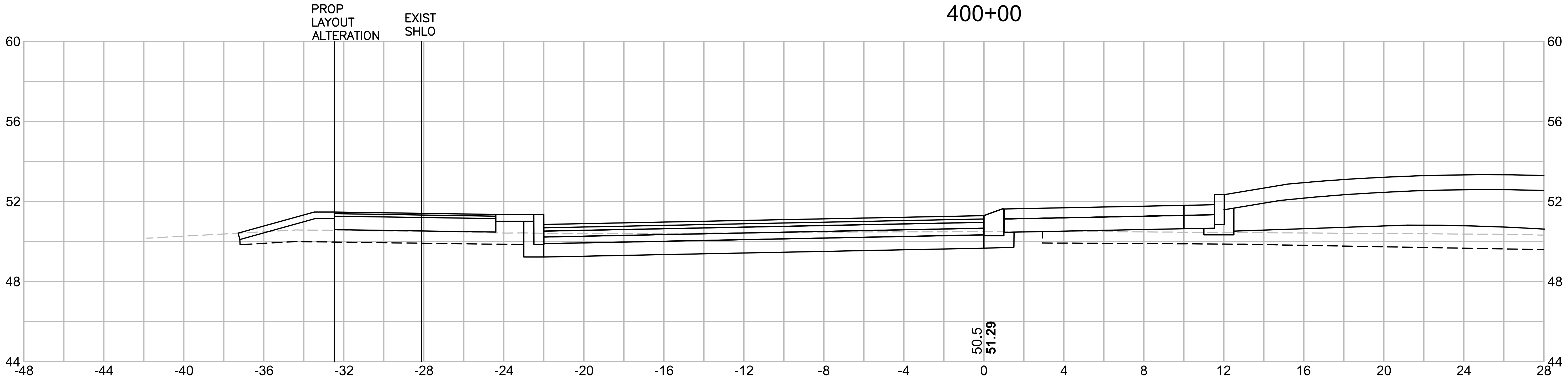
CUT: 57.79 SF
FILL: 35.16 SF

400+20



CUT: 50.53 SF
FILL: 36.09 SF

400+00



CUT: 48.29 SF
FILL: 30.93 SF

SCALE IN FEET

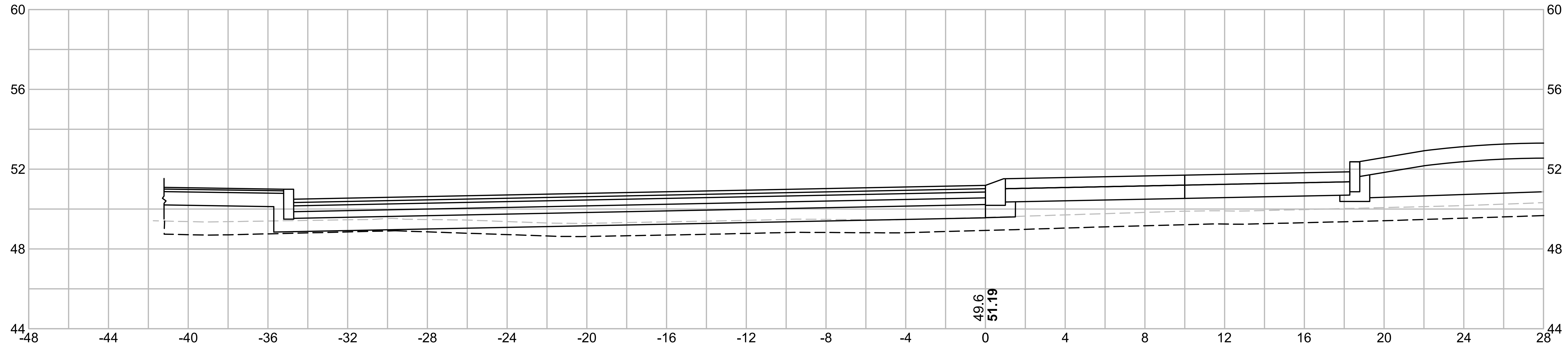
CHATHAM
MAIN STREET (ROUTE 28) FROM GEORGE RYDER ROAD TO BARN HILL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	108	109
PROJECT FILE NO.	606596		

CROSS SECTIONS
BARN HILL ROUNDABOUT

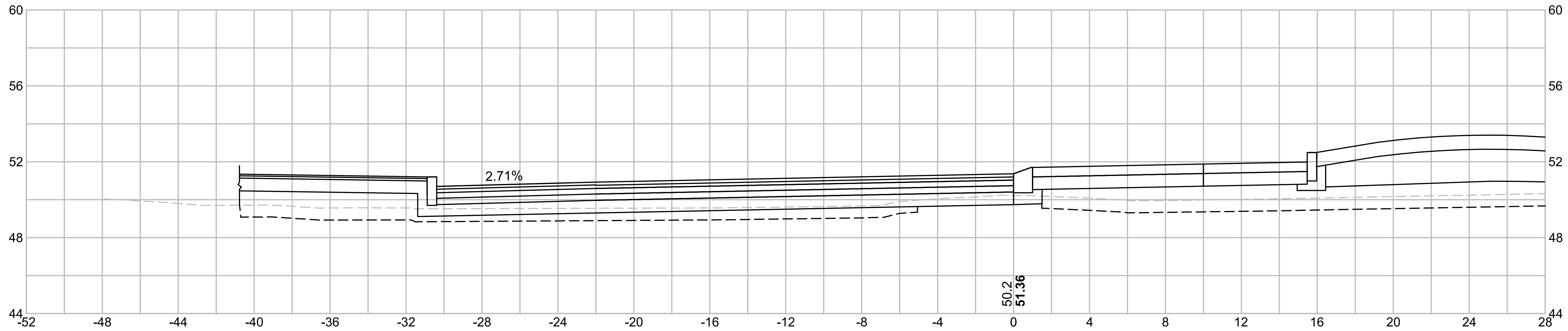
606596_HD(CROSS SECTIONS BARN HILL).DWG Plotted on 30-Mar-2018 2:26 PM

401+00



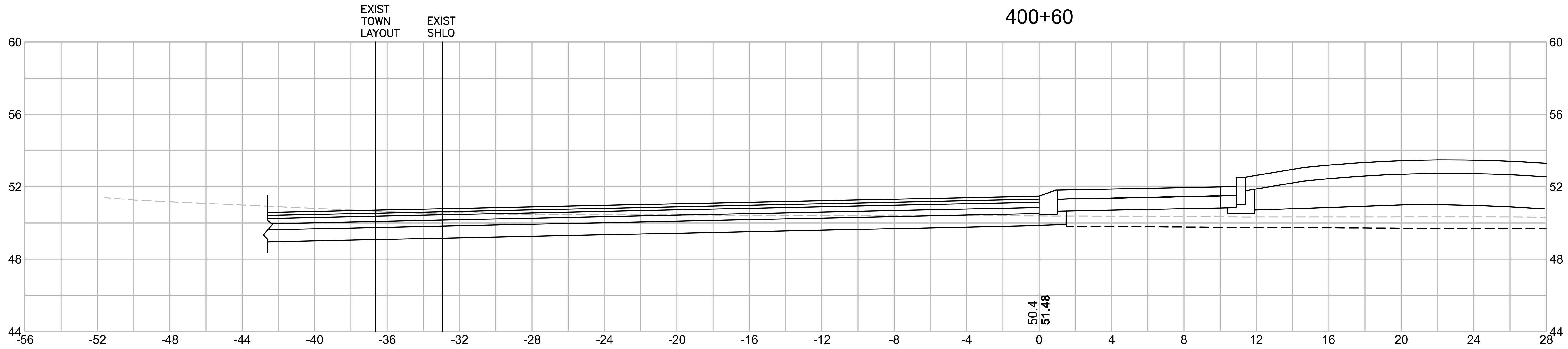
CUT: 45.20 SF
FILL: 56.94 SF

400+80



CUT: 42.59 SF
FILL: 54.36 SF

400+60



CUT: 63.42 SF
FILL: 28.65 SF

CHATHAM
MAIN STREET (ROUTE 28) FROM
GEORGE RYDER ROAD TO BARN HILL ROAD

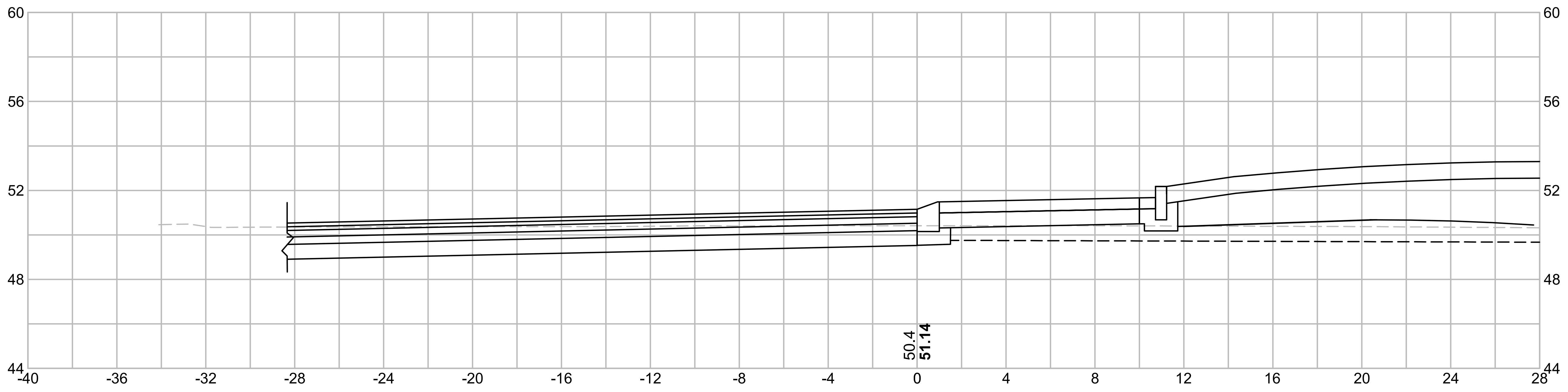
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ/TAP/STP-003S(158)	109	109
PROJECT FILE NO.	606596		

CROSS SECTIONS
BARN HILL ROUNDABOUT

606596_HD(CROSS SECTIONS BARN HILL).DWG

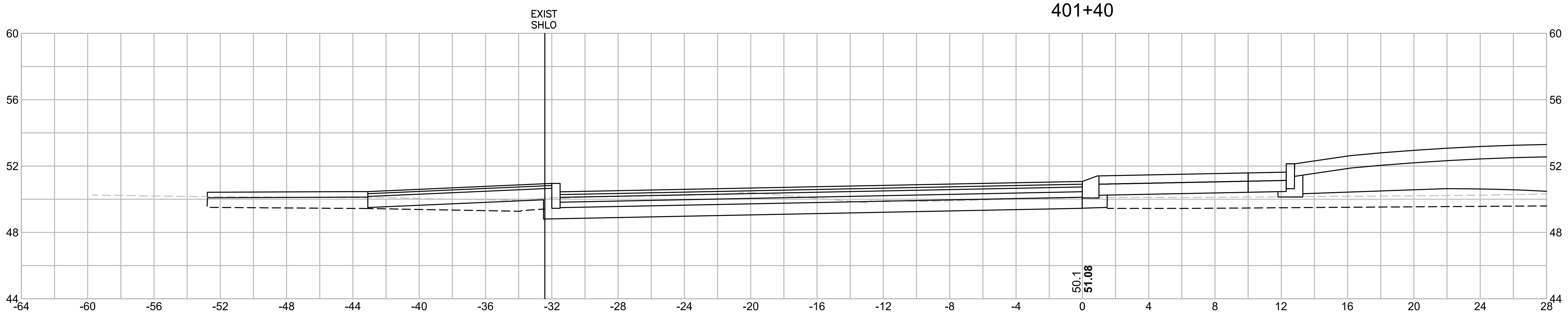
Plotted on 30-Mar-2018 2:26 PM

401+58



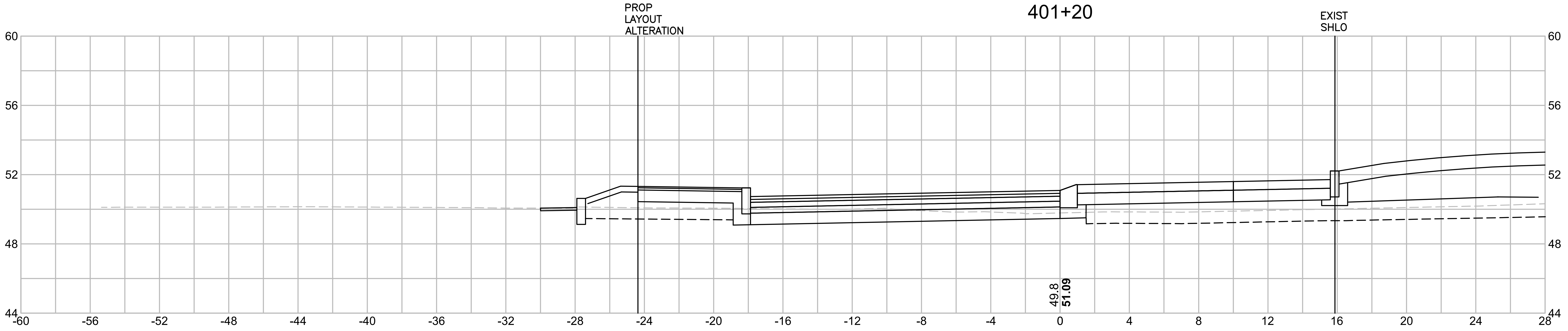
CUT: 51.80 SF
FILL: 20.70 SF

401+40



CUT: 62.87 SF
FILL: 34.74 SF

401+20



CUT: 36.27 SF
FILL: 39.19 SF

4 0 4 8
SCALE IN FEET